

IN2011.00077

# **INSPECTION REPORT**

for the

## **CLEAN HARBORS**

### **ARAGONITE, LLC FACILITY**

UTD 981 552 177

**FY 2010 Inspection**  
**(Volume 1 of 3)**

September 13 - 21, 2010

Prepared by  
Utah Division of Solid and Hazardous Waste



**HAZARDOUS WASTE INSPECTION REPORT**  
for the  
**CLEAN HARBORS ARAGONITE, LLC FACILITY**  
(formerly Safety-Kleen (Aragonite), Inc.,  
Laidlaw Environmental Services (Aragonite), Inc.,  
and Aptus, Inc.)

Date of Inspection: September 13-21, 2010

Type of Inspection: Annual Compliance Evaluation Inspection (CEI)  
Sampling Inspection (SI)

Participants: Rick Page (UDSHW)  
Boyd Swenson (UDSHW)  
Jeff Mensinger (Aragonite)  
Luz Anderson (Aragonite)  
Bill Conners (Clean Harbors)  
Michael Marlowe (Aragonite)  
Cody Parks (Aragonite)  
Larry Cruse (Aragonite)

Weather: see below

Time in: see below

Time out: see below

Date Report Prepared: September 23, 2010

Purpose and Scope

The purpose of the inspection was to verify compliance with the permit and other applicable regulations. It was an annual inspection designed to evaluate compliance in all areas of the permit. It covered all areas, but focused on the issues noted on the June 29, 2010 Notice of Violation. It was also to collect splits of the slag and residue samples for verification of the land disposal restrictions (LDR).

## Narrative

The on-site portion of the inspection lasted five days. The following outlines the inspection days.

Monday, September 13, 2010: 8:15 am - 2:35 pm, sunny, clear, 62-85°F.

Tuesday, September 14, 2010: 8:00 am - 3:30 pm, sunny, partly cloudy, wind from the south, afternoon rain, 68-85°F.

Wednesday, September 15, 2010: 8:15 am - 3:30 pm, sunny, clear, 57-82°F.

Thursday, September 16, 2010: 8:20 am - 3:30 pm, sunny, clear, 60-86°F.

Tuesday, September 21, 2010: 8:25 am - 3:50 pm, sunny, clear, 62-80°F.

Split samples of the residue and slag from the incinerator were collected on September 13, 2010. Sample RD100913D was a split of the composite sample of baghouse dust and spray dryer residue generated on September 11, 2010. Sample SL100913D was a split of the composite sample of the slag generated on September 11, 2009. These samples were analyzed for PCBs and metals required under the land disposal restrictions.

Sample RD100913W was a split of the composite sample of baghouse dust and spray dryer residue generated during the week from September 6 to September 12, 2010. Sample SL100913W was a split of the composite sample of the slag generated during the week from September 6 to September 12, 2010. These samples were analyzed for volatile organics, semi-volatile organics, herbicides, and pesticides required under the land disposal restrictions.

The split samples were delivered to the Unified State Laboratory for analysis on September 13, 2010.

The analytical results from the Unified State Lab for the slag and residue samples that were split on September 13, 2010, have been received. These, and the lab results from Aragonite and their contract laboratories, were reviewed and compared to the Universal Treatment Standards (UTS).

The analytical reports from Aragonite are in Attachments 1-4. The reports for the daily slag sample from September 11 are included in Attachment 1. The reports for the daily residue sample from September 11 are included in Attachment 2. Attachment 3 has the reports for the slag and residue weekly composites of September 6-12 for volatiles, semivolatiles, nonhalogenated organics, herbicides, pesticides, and cyanide. Attachment 4 includes reports for

the slag and residue weekly composites of September 6-12 for the dioxins/furans and carbamates analyses.

Aragonite has gone back to using TestAmerica for their LDR analyses. This was partially due to the problems they had last time with the results from the Clean Harbors Kimball lab. Aragonite again had been campaigning carbamates and dioxins during the sampling period from which the splits were taken. Analyses for the dioxins/furans were done by the TestAmerica Sacramento lab. The carbamates were subcontracted by TestAmerica to APPL, Inc. Ziram (one of the carbamates) was further subcontracted to North Coast Laboratories. Aragonite does the metals, PCBs, and cyanides in-house. The volatiles, semivolatiles, nonhalogenated organics, herbicides, and pesticides were done by the TestAmerica Denver lab.

Aragonite's analyses show that, for the weekly slag composite, all parameters passed for organic constituents except for n-butanol, methapyrilene, triethyl amine, and tris(2,3-dibromopropyl) phosphate. Aragonite's analyses also show that, for the weekly residue composite, all parameters passed for organic constituents except for n-butanol, 2-chloro-1,3-butadiene, methapyrilene, triethyl amine, and tris(2,3-dibromopropyl) phosphate. However, the failures are actually due to an elevated detection limit. Aragonite has cited §268.40(d) that allows an elevated reporting limit of up to an order of magnitude to justify a passing value (see Attachment 14). These parameters were not analyzed by the Unified State Laboratory.

The analytical packets showed non-detects at reporting limits of 4 and 7.9 mg/kg for cyclohexanone in the slag and residue respectively. The UTS for cyclohexanone is 0.75 mg/l TCLP. The analytical packets also showed non-detects at a reporting limit of 1.0 mg/l for methanol in both the slag and residue. Even though the methanol results are reported in mg/l, they are total results and not TCLP (see Attachment 15). The UTS for methanol is 0.75 mg/l TCLP. Aragonite has justified passing values by noting that the TCLP procedure requires a 20 fold dilution. A total value 20 times greater than the TCLP standard would still conservatively pass the standard.

The analyses did not include results for 1,3-phenylenediamine, 2,4-dimethylaniline(2,4-xylidine), o-anisidine, and p-cresidine. They were not included by TestAmerica as part of their analysis but have since been added to the list (see Attachment 15).



The samples were analyzed for total cyanides but not for amenable cyanides. Since the amenable cyanide is a subset of the total cyanide, Aragonite does not analyze for amenable cyanide unless the total cyanide is above 30 mg/kg (the treatment standard for amenable cyanide).

During the week, Aragonite campaigned wastes with dioxin as an underlying constituent. The weekly composites for the slag and residue therefore include analyses for dioxins and furans. The split of the weekly composite samples were not analyzed for dioxins and furans by the Unified State Laboratory.

The dioxin/furan analyses for pentachlorodibenzodioxin, pentachlorodibenzofuran, hexachlorodibenzodioxin, and hexachlorodibenzofuran in the slag and residue were not detected at a reporting limit of 1.2  $\mu\text{g/kg}$  and 2.5  $\mu\text{g/kg}$  respectively. The UTS for these compounds is 0.001 mg/kg (1  $\mu\text{g/kg}$ ). This was noted on the Memo to File (see Attachment 14) but no justification for meeting the standard was given. Aragonite believes it is the same justification as for the volatiles and semi-volatiles (the citation in S268.40(d) that allows an elevated reporting limit of up to an order of magnitude and still be considered a passing value (see Attachment 15)).

During the week, Aragonite campaigned wastes with the carbamate waste codes. The weekly composites for the slag and residue therefore include analyses for these carbamate compounds. The split of the weekly composite samples were not analyzed for carbamates by the Unified State Laboratory.

The analyses did not include results for m-cumenyl methylcarbamate. However, Aragonite had not burned any waste codes that required that particular compound to be analyzed (see Attachment 15).

The lab noted that the blue ice had melted and the samples arrived at 17°C (63°F).

The weekly composite samples are not analyzed for metals and PCBs. This is because each daily composite sample is analyzed for metals and PCBs and these daily analyses are used to demonstrate LDR compliance. The lab results from Aragonite for slag and residue generated on September 11 were reviewed and compared to the Universal Treatment Standards (UTS).

Aragonite uses a treatment standard for PCBs of 2 mg/L. The UTS for PCBs is 10 mg/kg. Aragonite uses the lower limit because that is what is specified in their TSCA permit. They had tried unsuccessfully to change the limit in their permit to match the UTS.

The Aragonite analytical results showed that the daily slag sample passed all of the applicable UTS. The results from the Aragonite lab show that the sample of the daily residue composite would not pass the UTS for cadmium, mercury, silver, and zinc. These failures, and the appropriate standards, were noted on the HSWA Analytical Review form (see Attachment 16) so that the appropriate notifications and certifications could be made to the designated receiving facility.

The analytical reports from the Unified State Lab are in Attachments 5-8. The reports for the daily slag sample from September 11 are included in Attachment 5. The reports for the daily residue sample from September 11 are included in Attachment 6. Attachment 7 has the reports for the slag weekly composite of September 6-12 and Attachment 8 includes the reports for the residue composite sample from that week.

None of the weekly composite samples failed treatment standards for organic compounds. Although an expanded list of analytes was obtained from the Unified State Laboratory, there are still several compounds that are not analyzed. Chlordane appears to fail the treatment standards in both the slag and residue but it is actually due to elevated detection limits, so no conclusions can be made concerning this compound.

The Unified State Laboratory confirmed the failure of the residue to meet the LDR standards for cadmium and zinc. The Unified State Laboratory also showed failure for lead in the residue that was not indicated by the Aragonite lab. However, the same treatment of the waste would occur due to the failure of cadmium and zinc. The Unified State Laboratory did not confirm the failure of the residue for silver. However, the results were similar to the Aragonite results with Aragonite's results just over the standard and the State's results just under the standard. The Unified State Laboratory appears to confirm the mercury failure in the residue and also shows the slag failing for mercury. However, these apparent failures are actually due to elevated detection limits, so no conclusions can be made concerning this compound.

Summaries of the analytical results from both Aragonite and the Unified State Laboratory, along with comparisons to the UTS, are included in Attachments 9-12. Attachments 9 and 10 include the summaries for the daily slag and residue samples from September 11. Attachments 11 and 12 include the summaries for the weekly slag and residue samples from September 6-12.

Copies of the Sample Tracking Forms and Sample Receipt are included in Attachment 13.

The rolloff boxes at the facility (both incoming and outgoing) were inspected. There were several incoming boxes of refinery sludge that did not have the tops completely secured. The end strap was not connected and cinched down on these boxes. You could see a gap of about one inch between the lid and the box (see photos) and there was a very strong odor present. Rolloffs 5530, 5326, and 25111 were some of the boxes with these gaps. An operator corrected these problems and tightened down at least five more lids before they were observed by the inspectors. There were other boxes that had these gaps that couldn't be fixed immediately. The lid of rolloff 5221 was bent and could not be tightened down enough to remove the gap. The ratchet for the strap to tighten down the lid of rolloff CHHP20903 was broken. The gasket on the lid of rolloff 5202 was peeling off. The lid on rolloff 25794 was tightened as much as possible with the strap and ratchet but there was still a gap.

Rolloff 25729 (tracking number 22251495) was an incoming load from Chevron. It had been placed in the berm in front of the sludge receiving tank prior to being accepted and dumped into one of the bulk solids tanks. The waste tracking system showed this storage location to be called 404B (see Attachment 17). Apparently, the other locations in that berm are called 404A, 403, and 406. The *EPA Area Search* screen on the State's access to the waste tracking system does not have this location designation. The location designations in the *Bulk solids sludge pad* area on that screen are Position 1, Position 2, Position 3, and Position 4. Also, the screens for the *Blend Liquid Tanks*, *Aqueous Liquid Tanks*, and the *Bulk Solids Tower* on the *EPA Area Search* screen were not working.

The site-generated rolloff boxes holding slag, baghouse dust, and spray dryer residue were also inspected. There were 19 rolloffs on the east side of the east accumulation area that were empty (normally they hold full ones there). Apparently, they were boxes that had been taken out of service and were either going to be repaired or scrapped. Several still had hazardous waste labels on them (see photos). These labels were removed by Aragonite.

Rolloff box 411209 was full and had a very slow drip coming from the tailgate (see photos). Aragonite personnel were in the process of moving a few boxes that had been leaking to a secondary containment area. Box 411209 was already on their list. It was moved to the slag pad and diapered shortly after that.

Rolloff 410894 had a hazardous waste label dated 10-23-10. The correct date was determined to be 8-23-10 and the label was replaced with one with the right date. Aragonite indicated that the box also had another label on the other side that had the correct date.

The oldest rolloff on-site was dated 6-17-10 (88 days). All of the tarps were in place and in good repair.

There are water cannons with foam eductors located on the east side of the bulk solids building. They are mounted in front of what were designed as blow-out doors (the force of the water from the cannon would blow the doors inward creating access to the bulk solids building for spraying a fire). It was noted that the doors were being held shut by a chain on a ratchet (see photos). Someone would have to manually release the chain, and thus the doors, before the water/foam from the cannons could access the bulk solids tank. However, it does not appear there is anything in the permit that would prohibit the doors operating this way.

The Natural Draft Openings (NDOs) were inspected. The opening in the shredder for the camera light was a round hole approximately eight inches across (see photos). The permit specifies a hole of 36 square inches (6" x 6"). The area of an eight inch round hole would be 50.26 square inches.

The shredder area cleanup door was slightly ajar (see photos). The gap was larger than the  $\frac{1}{4}$ " specified in the permit. The concrete around the door opening was also chipped, so that the gap would be greater than  $\frac{1}{4}$ " even when the door is closed.

Aragonite had previously stored wastes for longer than a year because of a glitch in the computer tracking system. It reset the date for a drum when various wastes were consolidated into the new drum, rather than keeping the date of the oldest waste. Aragonite indicated that this problem had been corrected. This claim was investigated and verified. Aragonite actually doesn't consolidate many drums any more. Most of the drums consolidated in the past contained mercury wastes. They have stopped doing that because people were combining things that shouldn't be combined (because of customer restrictions, etc.). The only drums they have consolidated since the problems noted last year, were the ones where they took several drums and consolidated them into one drum (on paper only) so that they could then repack the contents into several different drums (essentially repacking from several drums into several drums all at once).

The tracking of some of these consolidated drums were reviewed. The date received in the waste tracking system was observed from drum to drum as drums were consolidated and repacked. However, the date received disappears when a drum has been consolidated or repacked. It was discovered that there is another date in the waste tracking system called the "initial tracking date". This is the date they use to determine how long a waste has been on site. However, this date is actually the date that the waste first entered any Clean Harbors facility. It would therefore be accurate for drums that come directly to Aragonite. However, for drums that go to another Clean Harbors facility and then come to Aragonite, the date would be overly conservative (showing that it had been at Aragonite for the whole time it had been in the Clean Harbors system).

The tracking histories for two sets of drums that had been consolidated and then repacked were reviewed. Drums 19302546, 19415887, and 19364040 were consolidated into 19742633. This drum was then repacked various times into various other drums. The tracking histories show that the initial tracking date of the earliest original drum carried through all of the various operations as it was supposed to (see Attachment 18).

Drums 19563346, and 19533446 were consolidated into 19746963. This drum was then repacked various times into various other drums. The tracking histories show that the initial tracking date of the earliest original drum carried through all of the various operations as it was supposed to (see Attachment 19).

It would be very difficult, if not impossible to verify the age of containers from the State connection to the Clean Harbors waste tracking system. The screens that the State has access to do not include the initial tracking date. However, even with the initial tracking date available, this would only be a flag that you needed to look further because you would have to verify the actual arrival dates at Aragonite for all of the repacks and consolidates that went into it.

Aragonite ran a report of the aging history for the wastes currently at the site (see Attachment 20). It shows the longest time in storage (calculated from the initial tracking date) was for two drums at 259 days.

Another issue on the previous Notice of Violation was the lack of cross-references on the manifests of rejected containers. Several containers that had been rejected were selected and reviewed to ensure that the original manifest cross-referenced the new manifest they were shipped out on and that the new manifest

cross-referenced back to the original manifest it was shipped to Aragonite on. All of the manifests were cross-referenced but the cross-references on the new manifests were noted in box 18a, which is to be used by the designated facility (Aragonite would be the generator/offeror at this point) instead of box 14 (see Attachment 21). Aragonite had retrained the operators who would be involved in filling out these types of manifests (see Attachment 22).

The documentation related to their Procedure T requirements was reviewed. The smoke tests for the NODs during backup operations were done on 4-12-10 (see Attachment 23). The smoke tests for the NODs during normal operations were done on 4-15-10 (see Attachment 24). No problems were noted.

The positive pressure sections of the vent (K401 to the absorbers during backup operations and K101 and K102A/B to the incinerator during normal operations) were both documented on the same log with one date noted (see Attachment 25). Jeff indicated that he did the measurements and that he did the tests for normal operations the same day he did the smoke tests for normal operations (4-15-10). The log was updated to show this (see Attachment 25). Aragonite indicated that they would split up the log so there would be a separate date for each test.

On 8-25-10, Aragonite submitted new backup carbon absorber carbon life calculations (see Attachment 26). The new operating hours calculated were 525 hours during the summer and 774 hours during the winter. To get these new values, VOC measurements were taken during the last turnaround. The VOCs were measured on 4-9-10. The lab report was completed on 4-20-10. There was some confusion getting the lab report sent to the correct address but Aragonite got the results on 5-28-10. The results were then run through a spreadsheet calculation to group the compounds for use in the Calgon model of the carbon life. These results were then sent to Calgon on 8-6-10. Calgon ran the model and returned the results to Aragonite on 8-9-10. From these results, the carbon replacement intervals were recalculated on 8-13-10. These new values were programmed into the control system on 8-16-10 and the Executive Secretary was notified within the required 14 days. As can be seen, there was a significant delay between the time that Aragonite got the results from the lab and when they forwarded them to Calgon for modeling. However, this would not be a problem because the newly calculated carbon replacement intervals increased substantially, and they would have been using the more conservative values during that time.

The volumetric flow rate measurement during backup operations was conducted on 4-8-10 with a hot wire anemometer (see Attachment 27). The measured flow was

2603 cfm. However, it was unknown whether this was acfm or scfm. It was later reported that the anemometer measures in scfm but a correction factor was applied as the readings were taken so that the recorded values were in acfm. The calculations for the correction factor are in Attachment 28. However, the Calgon model treated the number as scfm. The previous measurement before this was 1670 cfm done on 4-8-09 (see Attachment 27). The carbon replacement interval was not recalculated when there was an increase measured in the flow to the carbon beds (April 2010). However, the recent recalculation of the backup carbon absorber carbon life described above used the new and higher flow rate. Also, the lower flows measured on 4-8-09 were never used to increase the replacement intervals; instead, they were still using the measurements from the previous year (which had a flow rate of 2480 cfm). Therefore, the increase in flow rate measured would be fairly small and is insignificant when combined with the new VOC measurements.

Fingerprint analyses were observed in the E5 lab. Copies of the applicable lab SOPs were obtained to evaluate performance.

Aragonite had reported a fire in the E5 lab on 6-30-10. It was apparently caused by a Bunsen burner being left on and later igniting some flammable vapors. One of the corrective actions for this incident was that Aragonite would no longer use the Bunsen burner but would use safety matches instead. The current SOP for the ignitability test (SOP #407, Rev #15, 3-31-09) still references the use of the Bunsen burner. The chemist was using the matches rather than a Bunsen burner.

The SOP for the radioactivity screen (SOP #410, Rev #6, 2-21-09) references a Ludlum Model 3 meter for this procedure. It says to read the calibration check in mr/hr and the sample in cpm. The meter being used in the lab was a Ludlum model 193. It only had one scale on it (cpm). The check source was being read in cpm. The calibration check source value was listed in cpm on the calibration sticker.

The SOP for water reactivity (SOP #403, Rev #8, 4-8-09) specifies that the sample be slowly added to the water so they can stop if it starts to react. This is also considered good laboratory practice in general. Instead, the chemist added the water to the sample.

The SOP for pH determination for solids and wastes (SOP #402, Rev #15, 6-30-10) specifies that the sample be mixed with an equal amount of water and stirred for five minutes. It then gives options for separating the aqueous phase. The chemist did not do anything to separate the aqueous phase and indicated that he

never does. The SOP also specifies that if the pH of the sample is greater than 11, the sample be heated to above 25°C and then the pH be read when the sample reaches 25°C ± 1°C. The pH of the sample from 22199989 was 11.83. It was not heated or remeasured. The chemist indicated that he never does this. The SOP also specifies that the pH and temperature be recorded. The pH was recorded but not the temperature.

The sample used to measure the pH (which has been diluted 50/50 with water) is then used to check for cyanides and sulfides. The SOPs for the Cyanide Screen (SOP #404, Rev #8, 2-20-09) and the Sulfide Screen (SOP #405, Rev #8, 2-20-09) do not specify adding water to the sample. They specify adding a phosphate buffer at 2.5 times the sample amount. The chemist mixes 20 grams of sample, 20 grams of water, and 20 grams of the phosphate buffer. The SOP also specifies that the sample with the phosphate buffer be stirred on a stir plate while measuring for cyanide and sulfide. The chemist mixes the water with the waste for five minutes for the pH measurement prior to the cyanide and sulfide screens, but the sample is not mixed after the phosphate buffer is added.

There was an overpack drum just east of the breezeway (north of the sludge storage tank building). Methyl pyridone, CH442675, D001, U161 were written on the drum (see photos). There was also a flammable liquid sticker and a hazardous waste label on the drum that had been spray painted. The hazardous waste label had indicated it was a flammable liquid with waste codes D001 and U161. The drum had a top on it but there was no ring to secure it. The drum contained a small amount (~ one inch) of clear liquid and a dirty absorbent pad (see photos). It had a very pungent odor. The drum was still in the same location the following day. It had caution tape around it and a note on it that said "Don't touch unless you talk to Marlow first" (see photos). Mike Marlowe indicated that he was holding off doing anything with the drum until some type of understanding could be reached. He believed the drum was empty and had just collected some rain water (because the ring was missing). It was agreed that Aragonite would take a sample of the liquid and determine what it was. A copy of the analytical results was requested during a follow-up visit to the facility on October 27, 2010. It was discovered at that time that a sample had been taken but that it had not been analyzed. All of the liquid in the drum had been poured into a large sample bottle. However, no one instructed the lab what analyses should be done, so it has just been stored in the lab. Apparently the drum was used for repacking a couple of days after the sample was taken. It was believed that the absorbent material was placed in the drum with the repack material and burned. A copy of profile CH442675 is in Attachment 29.



The compatibility testing of a decant job was observed (there were no robberoller jobs scheduled during the inspection). A sample of each drum on the belt was taken and added sequentially to a sample taken from the tank earlier that morning. It was noted that the stickers on the log sheet were not in the same order as the drums on the belt. However, the operator recorded the results in the order they were on the sheet so that the results were not noted for the correct drum. For example, the first three drums on the belt, and therefore the first three samples taken and tested, were from drums 22137868, 22137870, and 22137869. These were recorded on the first three lines of the log which corresponded to drum numbers 22137870, 22137871, and 22137868. The operator also noted the results in the wrong column on the log sheet (see Attachment 30). These problems were pointed out to the operator and he made the necessary corrections.

The SOP for compatibility testing (SOP #06WP-39, Rev #0, 5-20-10) specifies that, after adding the drum sample to the tank sample, the mixture be stirred for one minute before measuring the temperature with a thermometer. Several tests were observed and waiting longer than 30 seconds before reading the temperature was never observed. It was always less than three minutes between when the sample of the drum was pulled and decanting began.

In order to check for prohibited wastes accepted at the site, a list of the current inventory sorted by DOT hazard class was obtained. The packing groups of specific wastes were then verified. No problems were noted.

The waste analyses procedures for various site-generated wastes were investigated. Drum 22165661 was one of 14 drums generated from the cleanout of tank T-305. The drums were filled on 8-26-10. They were accepted on 8-31-10 (see Attachment 31). No sample was taken from the drums for fingerprint analyses. Instead, the chemistry was taken from a sample they had of the tank contents taken on 8-14-10 (see Attachment 32). However, the tank logs show that several more transfers (not all of the same material) were made into and out of the tank between 8-14-10 and 8-26-10 (see Attachment 33).

Drums 22195162-22195165 and 22195187 are described as "Baghouse/Spraydryer cleanout/Clive/CLHA250144/CLHA250237". They were site-generated wastes accepted on 9-2-10. No fingerprint analyses were done (see Attachment 34). Apparently, when an in-house drum is created, the system automatically final-codes it. The problem was noted on 9-16-10 and the drums were pulled from storage so a sample could be taken and run for the fingerprint parameters. The drums were

placed back in storage on 9-17-10 but the analyses for 22195187 were not completed until 9-24-10 (see Attachment 35) (the fingerprint analyses for drums 22195162-22195165 were completed on 9-17-10).

Drum 22194887 is described as "AG-CNO CNO NON HAZ SOLIDS AND DEBRIS". It was site-generated wastes accepted on 9-2-10. No fingerprint analyses were done (see Attachment 36).

Drums 22195850-22195854 and 22195878 are described as "SITE-SOLIDS IN-HOUSE GENERATED SOLIDS". They were site-generated wastes accepted on 9-2-10. No fingerprint analyses were done (see Attachment 37). This was noted on 9-16-10 and Aragonite pulled the drums from storage to sample them. They were placed back in storage on 9-17-10 but the analyses were not completed until 9-24-10 (see Attachment 38).

Drums 22195690-22195691 are described as "SITE-LIQUIDS IN-HOUSE GENERATED LIQUIDS". They were site-generated wastes accepted on 9-2-10. No fingerprint analyses were done (see Attachment 39). This was noted on 9-16-10 and Aragonite pulled the drums from storage to sample them and then placed them back into storage on 9-17-10. Apparently, the two drums were then split into two different lots for analysis (drum 22195691 remained in lot # 7087333 and drum 22195690 was changed to lot # 7131235). The analytical for drum 22195690 (lot # 7131235) was completed on 9-17-10 and the drum was incinerated on 9-21-10 (see Attachment 40). However, the analytical for drum 22195691 (lot # 7087333) was not done until 9-24-10 (see Attachment 40). Also, when the analytical for drum 22195690 was done, it was re-final coded so it now shows that it was accepted on 9-17-10 instead of 9-2-10. Also, since it was originally in lot # 7087333, the lab history shows that it was originally analyzed on 9-24-10 (which was after it was incinerated) (see Attachment 40).

Aragonite submitted two manifest discrepancy reports. The first was for drum 21174716 on manifest 003035719FLE (it was the only drum on the manifest). The report was dated 7-13-10 and was logged into DSHW on 7-14-10 (TN2010.02541). The drum was manifested from Commonwealth Labs in Massachusetts to Aragonite. The waste tracking history showed that it went to the Clean Harbors facilities in Braintree and Kimball before coming to Aragonite. It also shows that it was weighed in Braintree (see Attachment 41). The drum was shipped on 5-11-10 and the load was received at Aragonite on 6-2-10. Aragonite believes the container was not on the load. This was discovered at least by 6-7-10 (that is when the email chain began - see Attachment 41). The generator was contacted and

claimed the drum was picked up. Kimball was contacted and they believed it could have mistakenly got loaded on another van that was also coming to Aragonite a few days later. Aragonite decided to reset the manifest and void the drum at this point. This means that they entirely removed the manifest and the drum from the waste tracking system as if they never existed in the first place. They did this because it was a drum of infectious waste and they didn't want to get a violation for not burning it within seven days of receipt at the facility. The second van from Kimball arrived and was off-loaded about a week later. The missing drum did not show up on that van either. The discrepancy report was submitted 37 days after the discrepancy was discovered. The discrepancy was not noted anywhere on the manifest.

The second manifest discrepancy report was for drum 21569167 on manifest 000066984MWI. It was one of two drums on line 7 (the other drum was 21569168). The waste tracking history shows that drum 21569168 was plant received on 7-9-10, accepted on 7-19-10, and burned on 7-23-10. The discrepancy was not noted on the copy of the manifest submitted with the discrepancy report or the manifest in the Aragonite files. There was also no indication that there was a discrepancy on the *Waste Receiving Report* (see Attachment 42). The discrepancy report was dated 9-15-10 (58 days after drum 21569168 was accepted) and was logged into DSHW on 9-20-10 (63 days after drum 21569168 was accepted). From the emails and documentation in the load packet (see Attachment 42) it appears that Clean Harbors decided that the drum never existed (even though it was scanned and weighed at the Clean Harbors San Diego facility) so the drum was voided. The emails also make it appear that they never even contacted the generator. The last email even says that the generator would not have any knowledge of what was shipped (in responding to the previous email saying that the generator would have to agree before they voided the drum).

The incident reports and notifications for 2010 were reviewed. There were reports for three fires at the facility. There was a fire in the shredder/bulk solids tank on 8-12-10. Written notification to the Executive Secretary is required within 15 days. The notification letter to DSHW was dated 8-25-10 (13 days) but it was not submitted and logged in until 8-30-10 (18 days). There was a fire in the E5 lab on 6-30-10. The notification letter to DSHW was dated 7-14-10 (14 days) but it was not submitted and logged in until 7-19-10 (19 days). There was a fire in the shredder on 3-4-10. The notification letter to DSHW was dated 3-17-10 (13 days) but it was not submitted and logged in until 3-22-10 (18 days).

There were reports of five vent openings and six baghouse bypasses. Written notification to the Executive Secretary is required within 7 days. Of the eleven required reports, seven were submitted late as outlined below.

| <u>event</u>    | <u>date</u> | <u>report date</u> | <u>date submitted</u> | <u>number of days</u> |
|-----------------|-------------|--------------------|-----------------------|-----------------------|
| vent opening    | 6-20-10     | 7-6-10             | 7-7-10                | 17                    |
| vent opening    | 6-23-10     | 7-1-10             | 7-7-10                | 14                    |
| vent opening    | 8-23-10     | 8-31-10            | 9-1-10                | 9                     |
| baghouse bypass | 2-5-10      | 2-10-10            | 2-17-10               | 12                    |
| baghouse bypass | 6-20-10     | 7-6-10             | 7-7-10                | 17                    |
| baghouse bypass | 6-23-10     | 7-1-10             | 7-7-10                | 14                    |
| baghouse bypass | 8-23-10     | 8-31-10            | 9-1-10                | 9                     |

The drum educt (drum pumping station) operation was observed. The vacuum is now connected to the DCS with an interlock at 1" WC (rather than the manual gauge that used to be on the glove box). The interlock will close the block valve and the control valve. The diaphragm pump will stop on its own when the pressure equalizes. They have also installed a new door on the glove box. It has a retaining hook to hold it open rather than the pins that were used before.

There was some confusion on the appropriate PPE required for the inspectors. The inspectors were told of additional PPE required for observing various operations. However, there was no written policy available on the PPE requirements at the facility. The facility PPE policy was finally obtained on 10-27-10 (see Attachment 43).

The waste feed cutoff test from 9-13-10 was reviewed. The alarm list for that period, the Aragonite review form, and the DSHW checklist are located in Attachment 44. The alarm list showed an eight to ten second delay from when each value was forced and the corresponding interlock was activated. The programming was reviewed during a follow-up visit to the facility on October 27, 2010. It was discovered that this delay had been programmed into the system when it was converted from the WDPF to the new Allen Bradley DCS system. It was verified that the delay was only in the test itself and not in the actual interlock programming. Aragonite indicated they would make the corrections to the test program.

The archiving system (WonderWare) was reviewed for times when the oxygen in the vent system (AIT3044) went above 5% to evaluate the Aragonite responses to these events. One event was on 1-4-10 (see Attachment 45). *A System Trouble*

Report said that they were working on the O<sub>2</sub> meter. A work order was also generated (see Attachment 45).

Another event occurred on 1-9-10 (see Attachment 46). A System Trouble Report was generated indicating that the problem was caused by venting the 413 tanker and was corrected when the venting was finished (see Attachment 46).

A third event evaluated was on 8-26-10 near 7:57pm (see Attachment 47). There was no documentation for the response to this event. It was discovered that, although it shows up in WonderWare, there is no indication that it even happened according to the alarm list for that day (see Attachment 47). Aragonite looked into the problem and discovered that there was a 90 second delay programmed into the alarm (i.e., it would have to be above 5% continuously for 90 seconds before it would go into alarm). Aragonite removed this delay when it was discovered. Aragonite also indicated that they then reviewed the other tags and discovered and corrected several other similar delays that were in the program.

Drum 22094545 was a drum of cyanide located on the breezeway during the inspection. Waste tracking shows that it was repacked on 9-18-10 (see Attachment 48). However, waste tracking does not ever show it being moved to a location where it could be repacked (making it appear that it was repacked on the breezeway).

During the previous year's inspection (FY2009) there were issues with the storage of oxidizers, cyanides, and sulfides. Because of their reactivity, the permit requires that they be segregated from other wastes and only be stored in the bays in buildings E1 and E5. They were historically stored in one of the bays in building E1 but Aragonite wanted to use that space for receiving operations so they began holding the wastes in other locations and shuffling them around to avoid this permit requirement. Recently Aragonite has gone back to storing these wastes in the bays. Bay 3 (building E1) is being used to store acidic oxidizers and Bay 5 (building E1) is being used to store caustic oxidizers. Bay 2 (building E5) is being used to store cyanides and sulfides.

The permit allows two different operating modes (storage and receiving) for buildings E1 and E5 and the bays within those buildings, with corresponding storage capacities and configurations. Aragonite is required to have the current operating mode prominently displayed in buildings E1 and E5 at all times so that compliance with the permit can be determined. There was a "storage mode" sign on the door to building E1. There were also "storage

mode" signs on each of the bays (3, 4, and 5) in building E1. There was no sign on the door to building E5 indicating the operational mode. However, Aragonite put up a "storage mode" sign on the door during the inspection (see photos). Bay 2 in building E5 also had a "storage mode" sign (see photos). However, Bays 6 and 1 in building E5 had "receiving mode" signs (see photos).

There were two cubic yard boxes in the M-row of building E1 that had REJECT labels (22113985 and 22138017). Container 22113985 also had a green barcode (indicating it had been accepted) (see photos). On that day (9-21-10) the waste tracking system showed that they had both been rejected (see Attachment 49). The tracking histories show that both of these containers were later accepted at Aragonite (see Attachment 49). Neither of these containers shows up on the Reject Report (see Attachment 49) and the current tracking histories do not show that they were ever considered rejects.

In accordance with Condition 3.D.13 of the permit, Clean Harbors has provided remote access through the internet to the waste tracking system at Aragonite. The *EPA Area Search* screen will no longer access any of the tank systems at the facility.

In accordance with Condition 5.E.7 of the permit, Aragonite has set up a dial-up system which will access the required information. However, the hardware associated with this system is frequently down so that the data is not available much of the time.

The tank levels archived by the WonderWare program for 2010 were reviewed for exceedances. None were noted.

The quarterly calibration error reports for the previous year were reviewed and verified.

Operations were observed in the control room. Archived feed rate data and operating data was also reviewed in the WonderWare archiving program. Operations in the control room were also observed to document compliance with the PCB incineration requirements.

It was noted that the PLANT OVERVIEW screen only shows the differential pressure for the entire scrubber (it doesn't show the differential pressure for the first and second stages separately). They have all the necessary monitors to

determine the differential pressure for each stage but they only show the overall differential pressure on the screen. Apparently, the differential pressure for each stage is calculated and there is an hourly rolling average limit programmed into the system even though it is not shown on the screen.

The sum of the values from each of the sources on the HOURLY CHEMISTRIES screen did not match the totals listed on that same screen. This occurred for each of the parameters listed (see Attachment 50). It was discovered that the problem was that the drum pumping station was not included on the screen but was being added into the totals.

The TANK FARM OVERVIEW screen showed an automatic valve on the bottom of tank T-305 but the T-305 screen only showed a manual valve. Apparently, the automatic valve was removed from the tank system when it was converted to fuel oil service but it was never removed from the TANK FARM OVERVIEW screen.

In reviewing the archived data for the carbon absorber timers, there appeared to be periods of time when there was no data recorded. It was determined that the data really did exist but was not displaying as it should in WonderWare because of a glitch in Aragonite's version of the software.

The spray dryer drawing (D-034-PI-201 rev 21) and the spec from the permit were reviewed and verified in the field.

The inspection records for the facility were reviewed. The checklist used for the daily check of the incineration instrumentation (*Shift Instrument Checklist*) appears to have started in an electronic format in March 2010. The first checklist in the electronic system is dated 3-4-10. A copy of this checklist was printed out and is attached (see Attachment 51).

The kiln outlet temperature, TT1005C, is included in Attachment 3 of the permit, but is not on the electronic checklist. Cody Parks indicated that the instrument is operating and was calibrated during the last annual calibration for the pyrometers, but is not included in the inspection checklist since it has yet to be included in the permit for operational control purposes.

The electronic version of the *Shift Instrument Checklist* includes Carbon Feed Train #1, WT2037A, and Carbon Feed Train #2, WT2037B. Attachment 3 of the permit lists the activated carbon feed rate as WT2037RL. Cody Parks indicated

that Train #2 does not exist and that most of the equipment is gone. Larry Cruse indicated that Train #3 is WT2037B.

The electronic *Shift Instrument Checklist* from 3-4-10 indicates the kiln speed tag number as ST1003i. Attachment 3 of the permit indicates the kiln speed tag number as ST1003. Larry Cruse indicated that the "i" usually indicates that it is the raw signal and if the raw signal is further manipulated, there is a tag number without the "i." He wasn't aware of or why the raw kiln speed signal might be manipulated.

The *Shift Instrument Checklist* from 3-4-10 shows numerical values entered for A-104 atomizing air pressure (PDSL1124), A-106A blend atomizing air pressure (PDSL1187), A-106B blend atomizing air pressure (PDSL1224), A-104 blend waste liquid pressure (PSL1119A), A-106A blend waste liquid pressure (PSL1119B), A-106B blend waste liquid pressure (PSL1196), front wall combustion air pressure (PSL1127), north combustion air pressure (PI1191), and south combustion air pressure (PI1244). The same electronic inspection checklist for 3-7-10 shows the status for the same tags as "OK" (see Attachment 52). Review of multiple electronic checklists from March 2010 to the present indicated most often the tag numbers in question were identified as "OK," while occasionally numerical values were entered. Later in the inspection, inspection of the front wall and afterburner confirmed that pressure gauges do exist for the tag numbers identified above and Aragonite indicated that these are the source for the values being entered at times on the electronic daily *Shift Instrument Checklist*.

The electronic *Shift Instrument Checklist* includes additional CEM items not listed in Attachment 3 of the permit.

While looking through the electronic copies of the *Shift Instrument Checklist* from March 2010 to the present, it was noted that while all the required elements from Attachment 3 of the permit are covered, there is no place or provision on the electronic checklist to have the shift supervisor sign off daily as required by Attachment 3 of the permit. What Aragonite has been doing is continuing to print out in the control room each shift, a *Shift Instrument Checklist* which includes the instruments identified in Attachment 3 of the permit and this printout is being signed by the shift supervisor. This control room printout has been amended with an attached single page that includes the additional instruments noted as not being inspected during the Aragonite inspection the previous year. The *Shift Instrument Checklist* printout for 3-4-10 is included as Attachment 53 to this



report. The printout indicates the status of atomizing air pressure, waste liquid pressure and combustion air pressure as "OK".

The electronic inspection records from 1-1-10 to the present were examined to see if problems noted were being resolved within 72 hours, and if not, whether the Executive Secretary was being notified with a proposed schedule for resolution. This focused specifically at alarm testing and safety/security related inspections.

A problem was noted during the weekly inspection of the security fence on 3-30-10 and a new work ticket was created. It appears there were two work tickets associated with this same issue (39809 and 38726). The next weekly inspection of the security fence on 4-6-10 indicated the same problem and noted an existing work ticket. Subsequent weekly inspections of the security fence on 4-13-10 and 4-22-10 indicated that the perimeter fence was OK with no references to any existing work tickets. The next weekly perimeter fence inspection occurred on 4-28-10 and indicated that the fence was damaged but indicated that a new work ticket was created. This work ticket (39809) indicated that the work had been completed on 4-23-10. No explanation was offered indicating why the inspection on 4-28-10 indicated a problem when the problem had been resolved previously. No explanation was offered as to why the inspections on 4-13-10 and 4-22-10 indicated no problems with the security fence when the problem noted on 3-30-10 had not been resolved and there was an existing work ticket awaiting completion. There was no evidence that any notice was provided to the Executive Secretary regarding this issue and the associated delays in resolving the problem. Aragonite environmental staff indicated that the problem was not an issue discovered 3-30-10, but was resolution of the problem identified during the state inspection in September 2009. Copies of weekly inspection checklists, inspection work ticket details and a work order detail are included in Attachment 54.

The refrigerated storage van inspection records for February 2010 through May 2010 were reviewed. If the refrigerated van was not in use, there was a daily form indicating that the van was not in use. If the van was in use, there was an inspection entry indicating the temperature inside the van. During the months inspected, the refrigerated van was used several times each month. During the days when the van was in use, the temperature inside the van was recorded. In each case it was 40°F or less.

The closed vent system between the bulk solids building, the shredder, the apron feeder, the sludge receiving tank and the inlet to the sludge receiving tank was

inspected on 4-7-10 and documented on an inspection form. No problems were noted.

The carbon adsorption vessels F412A/B were inspected on 4-7-10 and documented on an inspection form. No problems were noted.

The hydrocarbon vent system carbon canisters were in use at certain times during May and June 2010. The required inspections every three hours appear to have been performed and were documented on the inspection log.

A copy of the latest org chart was requested and provided by the facility (see Attachment 55). The training records for Dane Hammond, listed on the org chart as a Receiving Technician I, were reviewed. His training file indicated he has been trained in Lab SOPs, signed off on 9-30-09, and received his Container Receiving Qual Card on 9-9-09. Other training courses received are indicated on his Student Training Summary (see Attachment 56). His required annual training appears to be current.

Training records for Traci Scharmann were reviewed. She is a new receiving employee hired 7-12-10 and is listed on the org chart as a Receiving Technician I. Traci Scharmann's Student Training Summary (see Attachment 57) shows she is still receiving initial training. Review of her training file indicated no Qual Cards received yet.

Training records for Robert Weston were reviewed. He is a new receiving employee hired 5-10-10 and is listed on the org chart as a Receiving Chemist I. Robert Weston's Student Training Summary (see Attachment 58) shows that most of the required initial training is complete. Review of his training file indicated no Qual Cards received yet.

Troy Griffith and Pitone Leapai are both identified on the org chart with the job title of Receiving Technician I. Training records for both employees were reviewed to determine if Qual Cards had been achieved by either employee.

Troy Griffith was hired on 6-4-07. He received his container sampling Qual Card and container receiving Qual Card on 8-29-07.

Pitone Leapai was hired on 8-24-07. He received his decant Qual Card on 2-29-08, and his container sampling and container receiving Qual Cards on 9-9-10.

The perimeter security fence was inspected with Luz Anderson. The perimeter fence was secure with all the warning signs in place and legible.

A copy of the Subpart BB drawing and equipment list for building E-16 was requested and provided by the facility (see Attachment 59). Luz Anderson indicated that the initial copies of the E-16 Subpart BB equipment list and drawing provided did not include a piece of equipment (E16-MV007) that was actually located in the field. The initial drawing of the Subpart BB equipment for building E-16 (D-800-BB-316, Rev D) included flange E16-F040 that had been removed in the field. It also included equipment tag F-306C which did not correspond to anything in the field and didn't appear to fit the equipment numbering scheme for building E-16 Subpart BB equipment.

The initial Subpart BB equipment list for building E-16 was compared to the initial Subpart BB drawing for building E-16. The equipment list matched the drawing with the exception of the discrepancies identified above.

Copies of an updated Subpart BB equipment list for building E-16 was later provided and reviewed. Valve E16-MV007 had been added to the list (see Attachment 60). Aragonite also provided a copy of an updated building E-16 Subpart BB equipment drawing (D-800-BB-316, Rev E) (see Attachment 61). Tag number E16-MV007 had been added and E16-F040 and F-306C had been removed.

The Subpart BB equipment in building E-16 was inspected. The latest Subpart BB drawing (D-800-BB-316, Rev E) (see Attachment 61) was compared to the equipment in the field. The equipment in the field matched the drawing.

Aragonite is still using the same in-house-developed database for managing Subpart BB equipment as was noted during the inspection the previous year. This database was created years ago and doesn't have the capacity of being added to or modified. Subpart BB changes are tracked in a separate spreadsheet. Aragonite indicated they are evaluating other options for Subpart BB management, from commercial software to developing a new system in-house.

The current Subpart BB database generates inspection/monitoring checklists for monthly, quarterly, semi-annual, and annual frequencies. Aragonite has no control on what equipment appears at which monitoring frequency, nor does the facility know if, or how, monitoring results affect subsequent monitoring frequency. Copies of blank Subpart BB monitoring checklists are attached (see Attachment 62). When new equipment is added in the field, the equipment is entered on a

separate spreadsheet which is used to keep track of the equipment and ensure inspections/monitoring are occurring. Luz Anderson indicated that when a new piece of equipment is added, it is inspected/monitored on a quarterly basis by default. Jeff Mensinger later clarified this and indicated that newly added equipment is monitored monthly for the first two months and if there are no leaks, then it moves to a quarterly monitoring frequency. The valve that was added to the building E-16 Subpart BB drawing and equipment list (E16-MV007) was not included on the monitoring checklists printed out by the facility database.

The monthly calibration records for July 2010 were reviewed. All required monthly calibrations outlined in Attachment 13 of the permit appear to have been completed in July. The most recent quarterly calibrations completed during April - June 2010 were reviewed. All quarterly calibrations required by Attachment 13 of the permit appear to have been completed during the April - June window. The annual inspections for 2010 were reviewed. Some had been completed; others will be completed later this year. The annual calibration of the scales throughout the facility occurred 9-14-10. Copies of reports for the main truck scale, E-1, E-2, E-4 Decant, E-4 Repack, and E-5 scales were provided (see Attachment 63).

The E-buildings, Breezeway, and Thaw Shed were inspected to verify the presence of fire extinguishers, phones, eyewashes, showers, and spill kits as specified on drawing D-034-M-005. An enlarged copy of the drawing, showing the inspected portions of the facility, is attached (see Attachment 64). The facility had the minimum specified equipment and in several cases had additional fire extinguishers not indicated on the drawing.

Copies of the latest submittals for the closure cost estimate, certificate of closure insurance, and certificate of liability insurance were reviewed, along with a copy of an Acord certificate of liability insurance (see Attachment 65). The language in the certificate of insurance/certificate of liability insurance was reviewed and meets the regulatory requirements.

A copy of the facility Infectious Waste Management Plan was requested and provided (see Attachment 66). In comparing the plan with the requirements in R315-316-2, the following was noted. The plan does not address the estimated quantity of infectious waste handled. It doesn't specify storage procedures, other than the waste must be incinerated within 30 days of shipment by the generator. It also doesn't identify the person responsible for management of the infectious waste.

Container inventories were requested and provided for Buildings E-1, E-5, E-4, and E-7 rows C, D, and F (see Attachment 67). The buildings were inspected and the inventory in the buildings compared against the inventory printouts.

Check marks on the building inventory sheets indicate containers were confirmed in the buildings as indicated on the inventory sheets.

Container 21257284 was located in building E-1, row K. The printed inventory showed no containers in row K. Aragonite indicated it was a transfer waste and was in the process of being shipped out.

Building E-1, Bay 4 had multiple containers in it and had ongoing activity moving containers in and out during the time of the inspection. The printed container inventory sheets indicated no containers in Bay 4. Aragonite indicated that Bay 4 was being used for truck-to-truck transfer wastes which don't show on the container inventory.

During the inspection, building E-1, row S was empty but the inventory sheets showed eleven containers in that row. The location of the containers was checked using the computer access in building E-1, and the computer inventory showed all eleven containers being located in building E-1, row P. Physical inspection of row P confirmed the presence of all eleven containers. Container tracking activity for four of the eleven containers (21871817, 22064725, 22100416, and 22066317) is attached (see Attachment 68). The tracking activity shows movement of the containers before, during, and after the inspection.

Building E-5, rows A and B were empty during the inspection, but the printed inventory showed containers being stored in these rows. Aragonite indicated that all of the containers had recently been moved. Two of the containers being shown on the printed inventory as being in building E-5, row B (22114817 and 22141379) were selected and the current status was looked up via the computer access to waste tracking in building E-5. The waste tracking system indicated that container 22114817 was currently located in building E-3, row/space D7, and level L3. Physical inspection confirmed the container in that location. The waste tracking system indicated that container 22141379 was currently located in building E-6, row/space C22, level L2. Physical inspection confirmed the container in that location.

The building E-5 inventory sheet showed no containers in row D, but containers were located there during the inspection. One of the containers physically located

in row D (22195853) was checked using the E-5 computer to access waste tracking. The current computer records indicated that the container was located in E-5, row D, matching the physical location of the container.

Multiple containers were selected from the printed inventory and their locations confirmed in buildings E-4 and E-7. Check marks on the printed inventory sheets indicate the containers confirmed in the buildings.

Fire extinguishers, eye washes, and showers were checked in truck unloading and the tank farm, and compared to the minimum specified on drawing D-034-M-005 (see Attachment 64). The facility met the minimum specified equipment identified on the drawing.

The tank form secondary containment was inspected. There were three areas in the secondary containment for tanks T-309 through T-312 where the coating was gone and the bare concrete was visible (see photos).

There were several areas in the secondary containment for tanks T-305 through T-308 where the coating was peeling off like paint, revealing another coating underneath (see photos). An area was also noted in this secondary containment where the coating was gone and the bare concrete was visible (see photos). A second area that was possibly bare down to the concrete was also noted (see photos).

There was an area in the secondary containment for tanks T-301 through T-304 where the coating was gone and the bare concrete was visible (see photos). There were also areas in this same containment area where the coating was peeling, but another coating was visible underneath (see photos).

The secondary containment for tanks T-321 through T-324 was inspected with no issues noted.

A checklist outlining other areas of the permit that were covered during the inspection is included in Attachment 69.

Compliance Issues/Concerns

- 1) The analyses of the slag and residue weekly composites did not include results for 1,3-phenylaminediamine, 2,4-dimethylaniline(2,4-xylydine), o-anisidine, and p-cresidine.
- 2) The dioxin/furan compounds that were not detected at a reporting limit above the UTS were not included in the Memo to File justifying a passing value.
- 3) The blue ice with the Aragonite samples had melted and the samples arrived at the lab at 17°C (63°F).
- 4) The Unified State Lab showed that the residue failed UTS for lead (not indicated by the Aragonite results). The Aragonite results showed that the residue failed UTS for silver (not indicated by the Unified State Lab results).
- 5) There were several incoming boxes of refinery sludge that did not have the tops completely secured. The end strap was not connected and cinched down on these boxes. You could see a gap of about one inch between the lid and the box and there was a very strong odor present.
- 6) The waste tracking system uses 404A, 404B, 403, and 406 to designate the storage locations in the berm in front of the sludge receiving tank. The *EPA Area Search* screen on the State's access to the waste tracking system uses the location designations of Position 1, Position 2, Position 3, and Position 4 for those areas so nothing ever shows up in those locations.
- 7) The screens for the *Blend Liquid Tanks*, *Aqueous Liquid Tanks*, and the *Bulk Solids Tower* on the *EPA Area Search* screen were not working.
- 8) Several empty rollofs on the east side of the east rolloff yard still had hazardous waste labels on them.
- 9) Rolloff box 411209 was full of slag and had a very slow drip coming from the tailgate.
- 10) Rolloff 410894 had a hazardous waste label dated 10-23-10. The correct date was 8-23-10.
- 11) The blow-out doors for the water cannons with foam eductors, located on the

east side of the bulk solids building, were being held shut by a chain on a ratchet.

- 12) The opening in the shredder for the camera light appeared slightly bigger than that specified in the permit.
- 13) The shredder area cleanup door was slightly ajar. The concrete around the door opening was also chipped, so that the gap would be greater than allowed even when the door is closed.
- 14) It would be very difficult to verify the age of containers from the State connection to the Clean Harbors waste tracking system since it does not include the initial tracking date. Even with the initial tracking date available, this would not be sufficient information to determine the time on-site at Aragonite.
- 15) Cross-references for rejected wastes were noted in box 18a on the new manifests instead of box 14.
- 16) The tests of the positive pressure sections of the vent for backup and normal operations were both documented on the same log with one date noted when they were done on different days.
- 17) It took Aragonite more than four months after the VOCs were measured before the new carbon replacement intervals were programmed into the system.
- 18) The volumetric flow rate measurements during backup operations were corrected and reported as actual cubic feet per minute (ACFM) but the Calgon model treated the number as standard cubic feet per minute (SCFM).
- 19) One of the corrective actions for a fire in the E5 lab was that Aragonite would no longer use the Bunsen burner but would use safety matches instead. The current SOP for the ignitability test still referenced the use of the Bunsen burner.
- 20) The SOP for the radioactivity screen referenced a Ludlum Model 3 meter but the lab was using a Ludlum model 193 for this procedure. It also said to read the calibration check in mr/hr and the sample in cpm. The meter being used only had one scale on it (cpm).



- 21) The SOP for water reactivity specified that the sample be slowly added to the water but it was done backwards (added the water to the sample).
- 22) The SOP for pH determination for solids and wastes specifies that the sample be mixed with an equal amount of water, stirred for five minutes, then separating the aqueous phase. The aqueous phase is not being separated.
- 23) The SOP for pH determination for solids and wastes specifies that if the pH of the sample is greater than 11, the sample be heated to above 25°C and then the pH be read when the sample reaches 25°C ± 1°C. This is not being done.
- 24) The SOP for pH determination for solids and wastes specifies that the pH and temperature be recorded. The pH was recorded but not the temperature.
- 25) The SOPs for the Cyanide Screen and the Sulfide Screen do not specify adding water to the sample but do specify adding a phosphate buffer at 2.5 times the sample amount. Aragonite mixes 20 grams of sample, 20 grams of water, and 20 grams of the phosphate buffer.
- 26) The SOPs for the Cyanide Screen and the Sulfide Screen specify that the sample with the phosphate buffer be stirred on a stir plate while measuring for cyanide and sulfide. Aragonite mixes the water with the waste for five minutes but the sample is not mixed after the phosphate buffer is added.
- 27) There was an overpack drum just east of the breezeway that contained a small amount of clear liquid and a dirty absorbent pad and had a very pungent odor. Indications were that it was methyl pyridine and the drum was not "empty". It was not properly labeled and was not in a proper storage location. The absorbent pad in the drum was not properly tracked.
- 28) The compatibility testing results of a decant job were entered on the wrong line of the decant log. The results were also noted in the wrong column on the log sheet.
- 29) The SOP for compatibility testing specifies that the mixture be stirred for one minute before measuring the temperature with a thermometer. The temperature was being measured well before one minute.
- 30) No sample was taken for fingerprint analyses from the 14 drums of site-

generated wastes generated from the cleanout of tank T-305. Instead, they used the chemistry from a sample they had of the tank contents before several more transfers were made into and out of the tank.

- 31) No samples were taken or fingerprint analyses done for several other site-generated wastes accepted into storage at Aragonite.
- 32) When the fingerprint analyses for drum 22195690 was done, it was re-final coded which changed its date of acceptance from 9-2-10 to 9-17-10. Also, the lab history shows that it was originally analyzed on 9-24-10, which was after it was incinerated.
- 33) The discrepancy report for drum 21174716 on manifest 003035719FLE was submitted 37 days after the discrepancy was discovered. The discrepancy was not noted anywhere on the manifest.
- 34) The discrepancy report for drum 21569167 on manifest 000066984MWI was submitted at least 63 days after the discrepancy was discovered. The discrepancy was not noted on the manifest. The generator was not contacted regarding the discrepancy. The drum was voided even though it was scanned and weighed at the Clean Harbors San Diego facility.
- 35) The reports for three fires at the facility were not submitted within the required 15 days.
- 36) The reports for three vent openings were not submitted within the required seven days.
- 37) The reports for four baghouse bypasses were not submitted within the required seven days.
- 38) The alarm list showed an eight to ten second delay during the waste feed cutoff test from when each value was forced and the corresponding interlock was activated.
- 39) There was a 90 second delay programmed into the alarm for when the oxygen in the vent system (AIT3044) goes above 5%. There were then other tags discovered that had similar delays.

- 40) Waste tracking shows a drum that was on the breezeway and then repacked without ever being moved to a location where it could be repacked (making it appear that it was repacked on the breezeway).
- 41) The sign on the door to building E5 indicated it was in "storage mode" but the signs in Bays 6 and 1 indicated they were in "receiving mode".
- 42) Container 22113985 had a REJECT label and also had a green barcode indicating it had been accepted.
- 43) Containers 22113985 and 22138017 were both rejected at one point and later accepted. Neither of these containers show up on the Reject Report and the current tracking histories do not show that they were ever considered rejects.
- 44) The dial-up system which accesses the WonderWare archiving system is frequently down so that the data is not available much of the time.
- 45) The kiln outlet temperature, tag # TT1005C is included in Attachment 3 of the permit, but is not on the electronic checklist.
- 46) The electronic version of the *Shift Instrument Checklist* describes WT2037B as Carbon Feed Train #2, instead of Carbon Feed Train #3,
- 47) The electronic daily instrument checklist indicates the kiln speed tag # as ST1003i but it is listed as ST1003 in Attachment 3 of the permit.
- 48) The *Shift Instrument Checklist* usually indicated several tag numbers as "OK" but occasionally numerical values were entered.
- 49) A problem noted during a weekly inspection of the security fence was not noted on subsequent weekly inspections (before it was fixed). The next weekly fence inspection indicated that the fence was damaged but the work ticket indicated that the problem had already been resolved. The Executive Secretary was not notified of this issue and the associated delays in resolving the problem.
- 50) The initial copies of the E-16 Subpart BB equipment list and drawing provided did not include E16-MV007 that was actually located in the field.

- 51) The initial drawing of the Subpart BB equipment for building E-16 included flange E16-F040 that had been removed in the field.
- 52) The initial drawing of the Subpart BB equipment for building E-16 included equipment tag F-306C which did not correspond to anything in the field.
- 53) The valve that was added to the building E-16 Subpart BB drawing and equipment list (E16-MV007) was not included on the monitoring checklists printed out by the facility database.
- 54) The Infectious Waste Management Plan does not address the estimated quantity of infectious waste handled, doesn't specify storage procedures, other than the waste must be incinerated within 30 days of shipment by the generator, and doesn't identify the person responsible for management of the infectious waste.
- 55) There were several areas in the tank farm secondary containment where the coating was peeling off and the bare concrete was visible.
- 56) Aragonite exceeded the allowable hours on a batch of carbon in the west carbon bed (Aragonite notification).
- 57) Multiple containers of infectious waste exceeded seven days on-site without being refrigerated (Aragonite notification) (four separate occurrences/notifications).
- 58) Aragonite missed inspections of the sumps and container storage buildings (Aragonite notification).
- 59) Aragonite processed totes through the drum pumping station while the totes were located outside of the glove box (Aragonite notification).
- 60) Aragonite held transfer waste beyond the allowable ten days (Aragonite notification).
- 61) Aragonite bulked material into the bulk solids tanks that exceeded the allowable LEL levels (Aragonite notification).

- 62) Aragonite held an incoming rolloff container of bulk solids longer than fifteen days before placing it in a permitted storage location (Aragonite notification).
- 63) Aragonite operated the incinerator on wastes without the pH probes monitoring the second stage rundown (Aragonite notification).

                      
Z. H. G. E.

Signature

                      
4 November 2010

Date





Clean Harbors Aragonite  
Gap between lid and top of box of incoming rolloff box #5530

September 13, 2010



Clean Harbors Aragonite  
Attaching strap to secure top of incoming rolloff box #5530

September 13, 2010





Clean Harbors Aragonite September 13, 2010  
Gasket peeling back on top of incoming rolloff box #5202



Clean Harbors Aragonite September 13, 2010  
Gap between lid and top of box of incoming rolloff box #251111





Clean Harbors Aragonite

September 13, 2009

Gap between lid and top of box of incoming rolloff box #CHHP20903



Clean Harbors Aragonite

September 13, 2009

Gap between lid and top of box of incoming rolloff box #25794





Clean Harbors Aragonite  
Empty rolloff in east yard with hazardous waste label & marked out of service



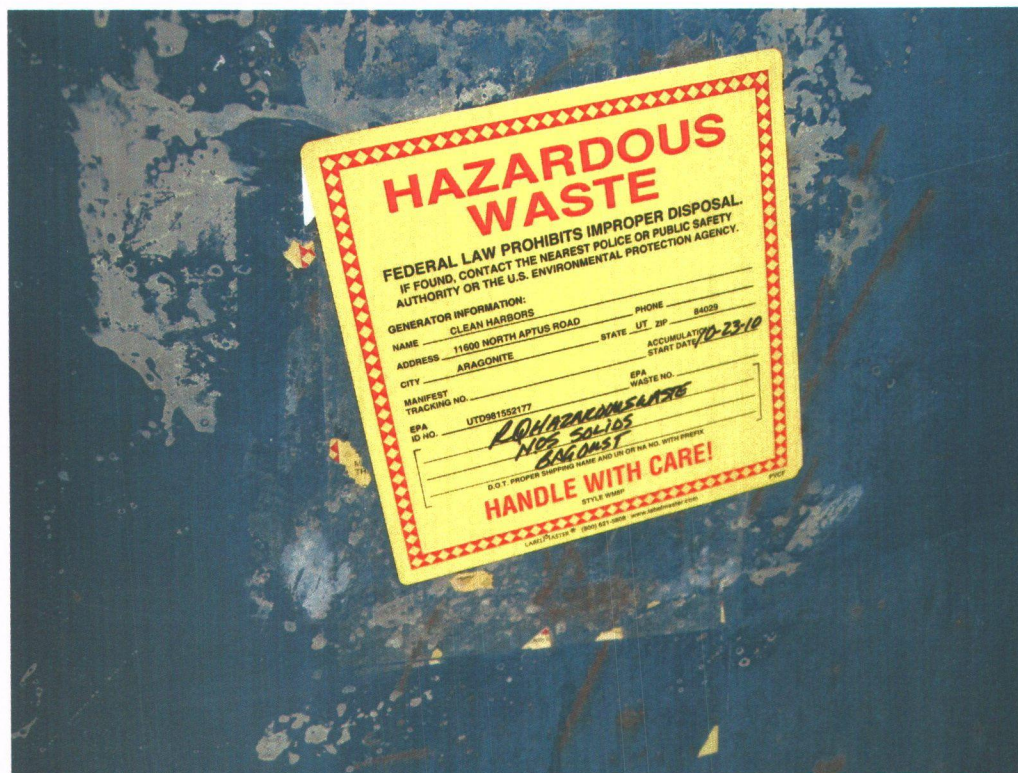
Clean Harbors Aragonite  
Empty rolloffs in east yard with hazardous waste labels & marked out of service





Clean Harbors Aragonite  
Leak from rolloff box #411209

September 13, 2009

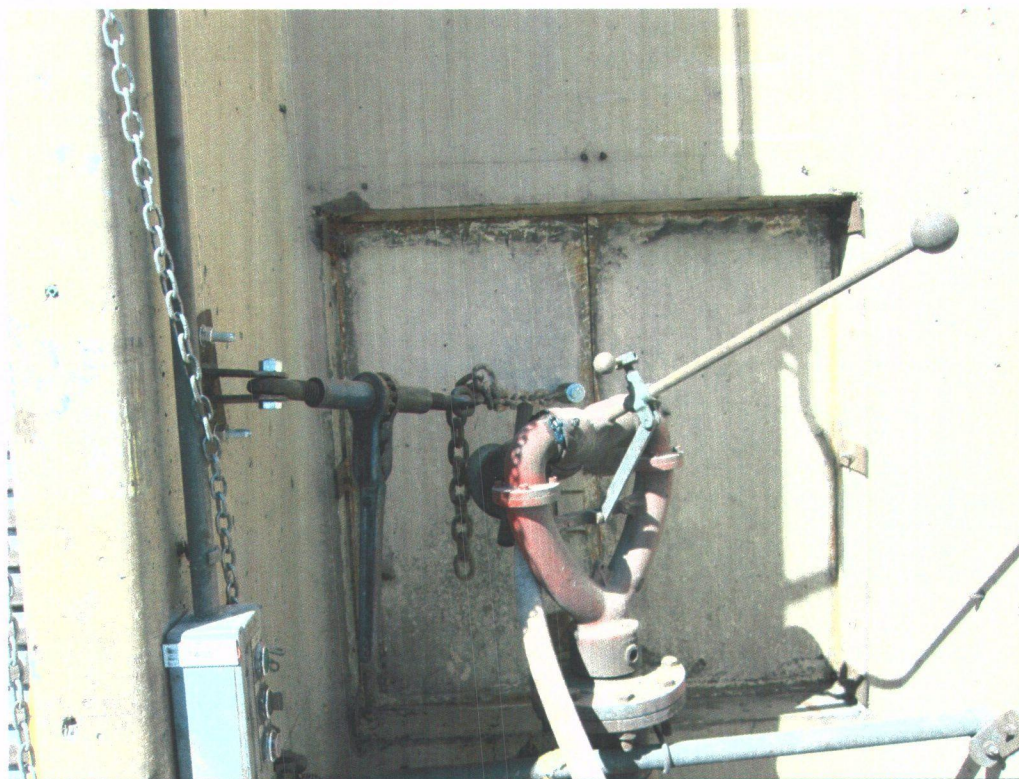


Clean Harbors Aragonite

September 13, 2009

Hazardous waste label with accumulation start date of 10-23-10





Clean Harbors Aragonite  
September 13, 2009  
Doors for water canons on east side of bulk solids building held closed with chain and ratchet



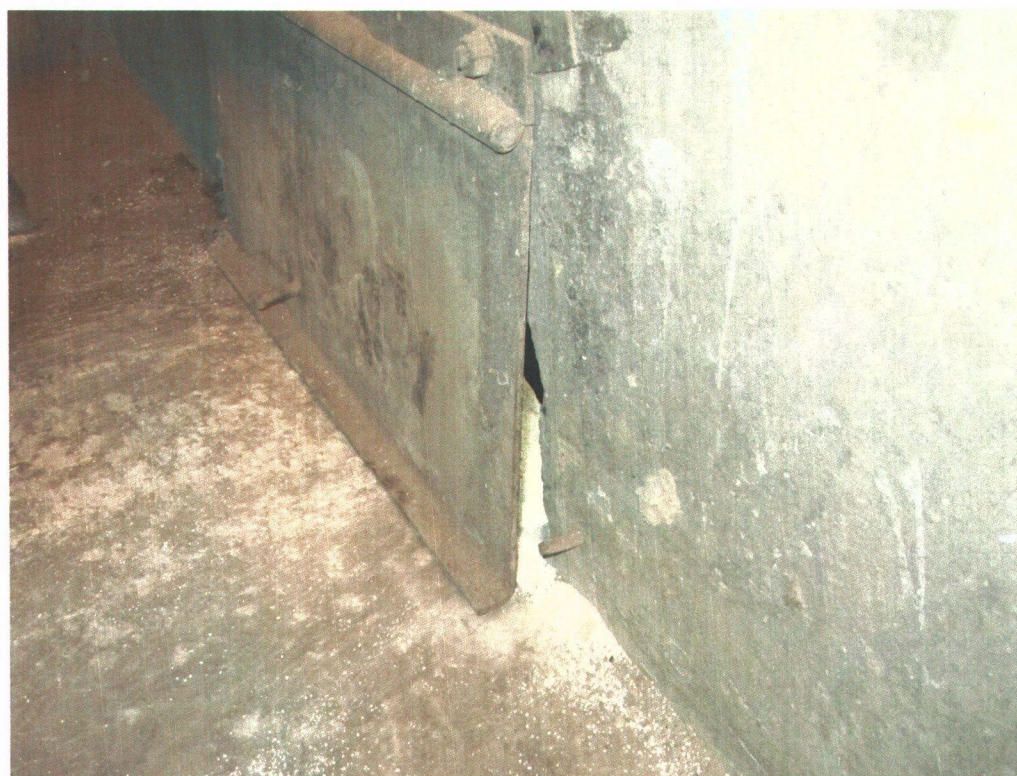
Clean Harbors Aragonite  
September 13, 2009  
Doors for water canons on east side of bulk solids building held closed with chain and ratchet





Clean Harbors Aragonite  
Opening for camera light on shredder

September 13, 2009



Clean Harbors Aragonite  
Shredder area cleanup door ajar and some of the chipped concrete

September 13, 2009





Clean Harbors Aragonite

September 15, 2010

Overpack drum east of breezeway (north of sludge storage tank building)

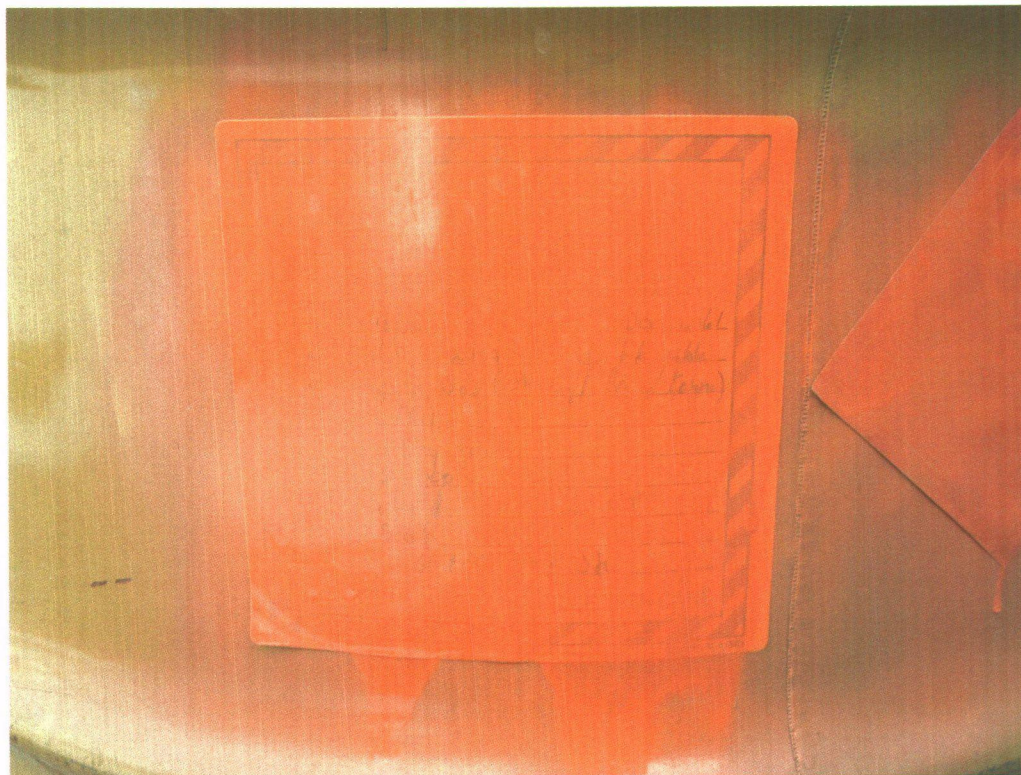


Clean Harbors Aragonite

September 15, 2010

Overpack drum east of breezeway (north of sludge storage tank building)





Clean Harbors Aragonite  
Sprayed out hazardous waste label on overpack drum

September 15, 2010



Clean Harbors Aragonite  
Absorbent pad and liquid inside overpack drum

September 15, 2010





Clean Harbors Aragonite  
Absorbent pad and liquid inside overpack drum

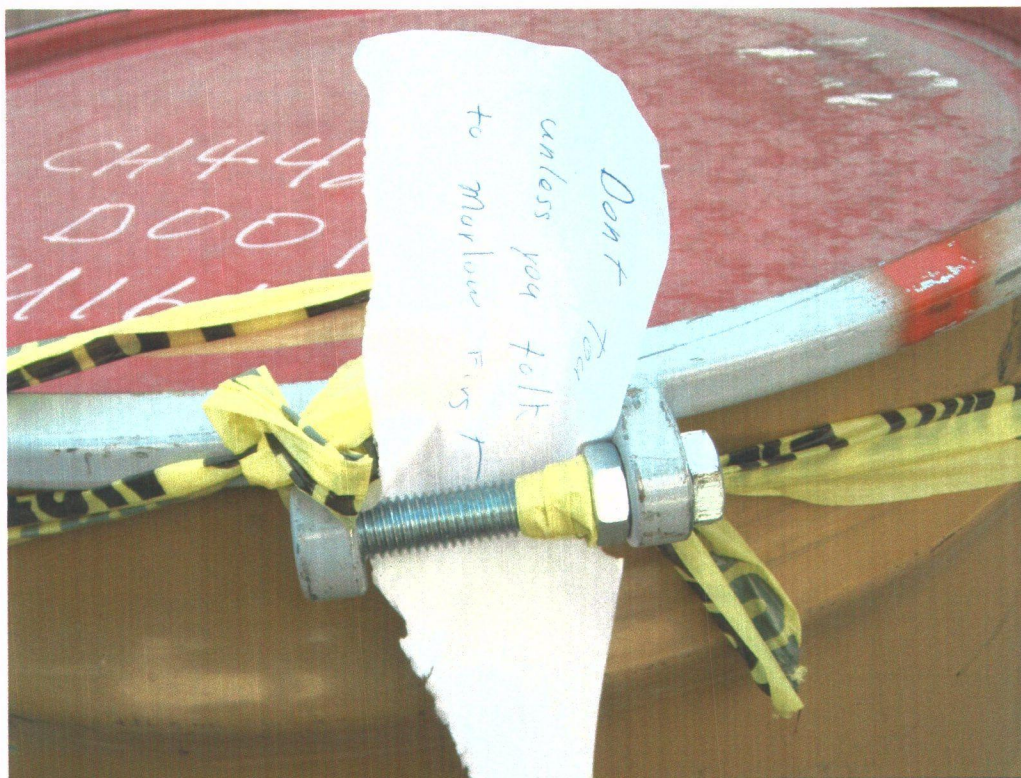
September 15, 2010



Clean Harbors Aragonite  
Caution tape around overpack drum

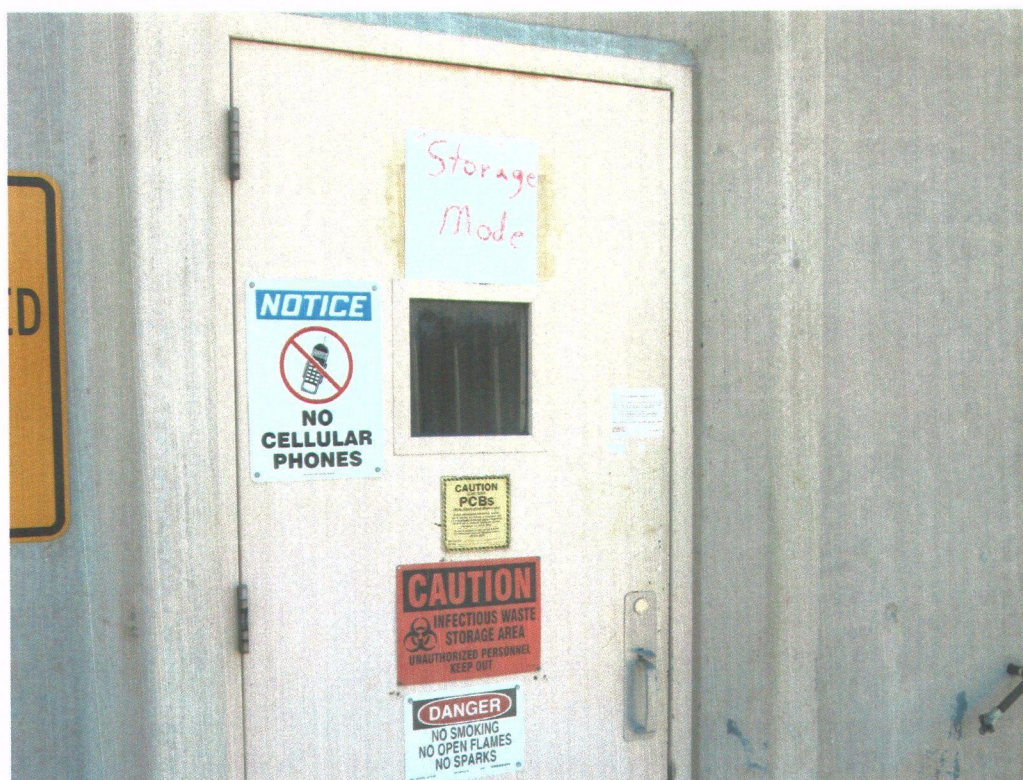
September 16, 2010





Clean Harbors Aragonite  
Note on overpack drum

September 16, 2010



Clean Harbors Aragonite

September 21, 2010

"Storage Mode" sign placed on the door to building E5 during the inspection





Clean Harbors Aragonite  
"Receiving Mode" sign on Bay 1 in building E5

September 21, 2010



Clean Harbors Aragonite  
"Storage Mode" sign on Bay 2 in building E5

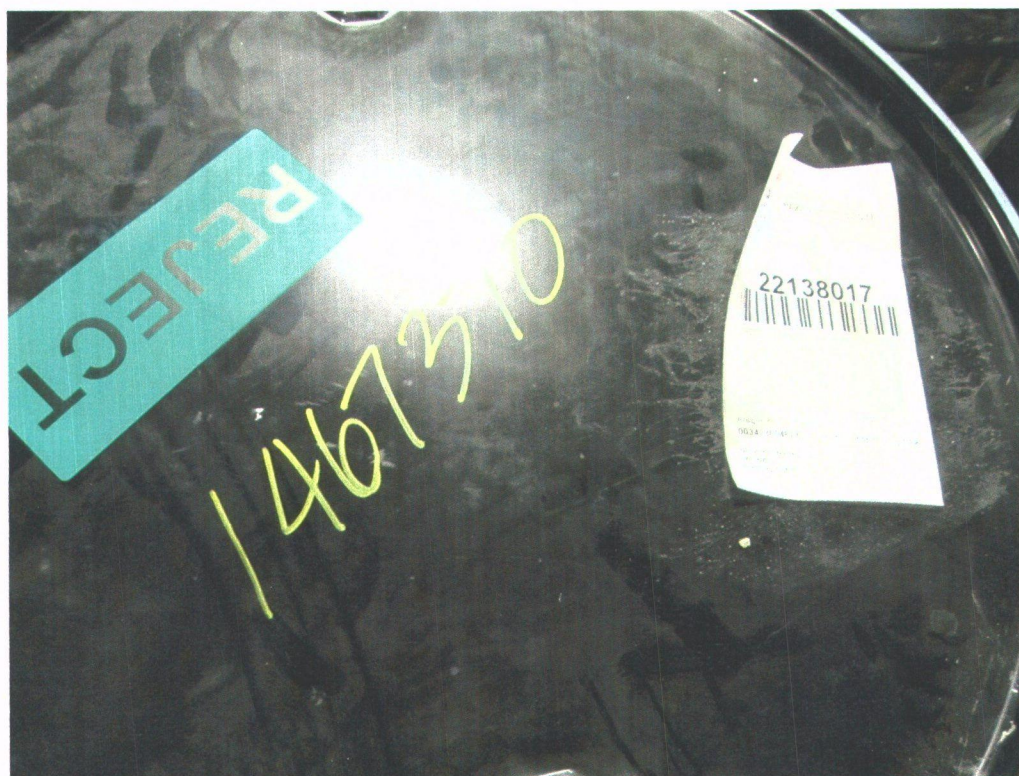
September 21, 2010





Clean Harbors Aragonite  
Container 22113985 with green barcode and REJECT label

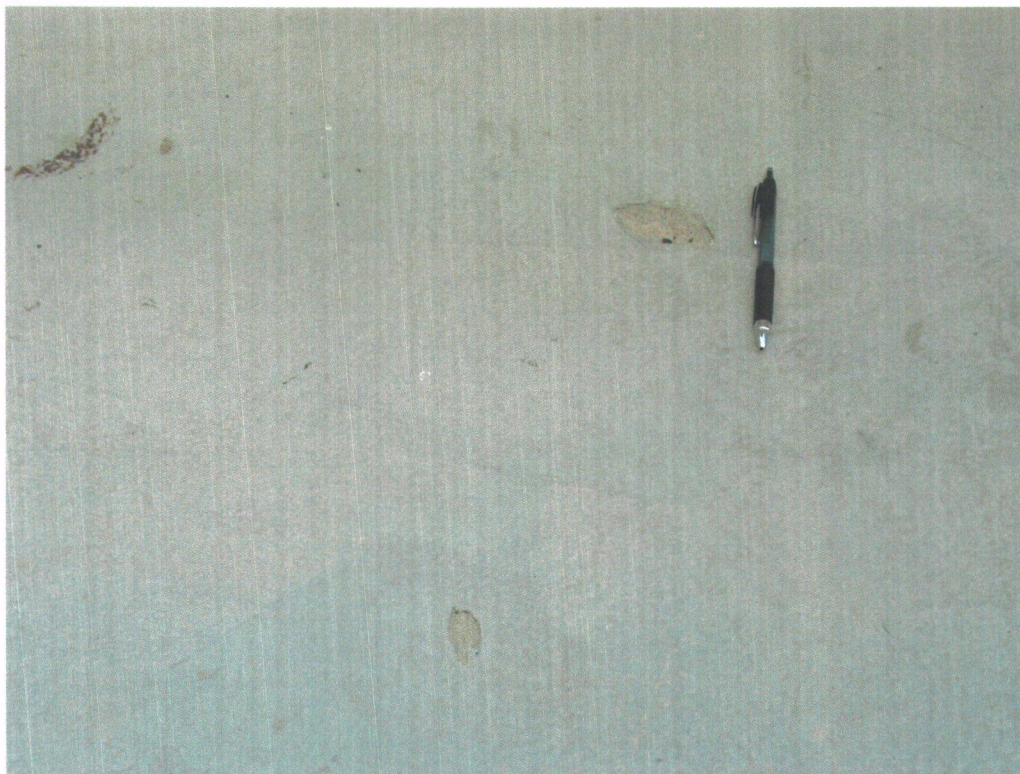
September 21, 2010



Clean Harbors Aragonite  
Container 22138017 with REJECT label

September 21, 2010





Clean Harbors Aragonite

September 16, 2010

Secondary containment for tanks T-309 through T-312



Clean Harbors Aragonite

September 16, 2010

Secondary containment for tanks T-309 through T-312





Clean Harbors Aragonite  
Secondary containment for tanks T-305 through T-308

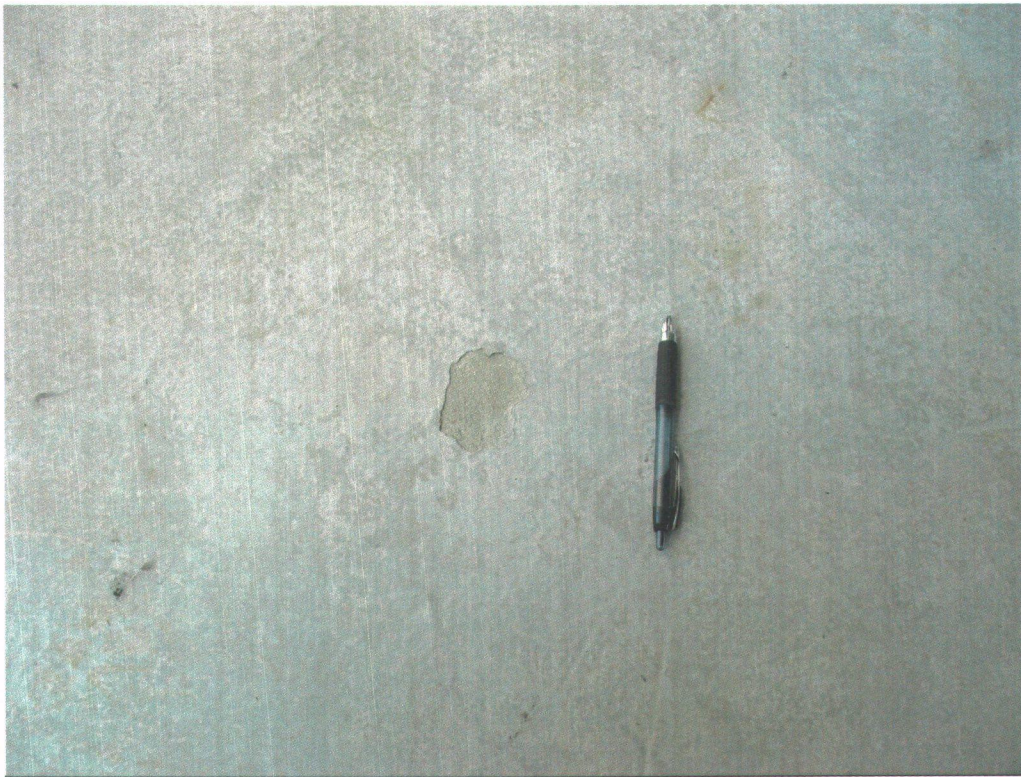
September 16, 2010



Clean Harbors Aragonite  
Secondary containment for tanks T-305 through T-308

September 16, 2010





Clean Harbors Aragonite

September 16, 2010

Secondary containment for tanks T-305 through T-308



Clean Harbors Aragonite

September 16, 2010

Secondary containment for tanks T-301 through T-304





Clean Harbors Aragonite

September 16, 2010

Secondary containment for tanks T-301 through T-304

A vertical dashed line runs down the left side of the page, consisting of a series of short, thick black horizontal bars separated by gaps.

# ARAGONITE NOTIFICATIONS



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
October 7, 2009

*Express*  
**RECEIVED**

OCT 12 2009  
UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE  
2009.03119

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On September 30, 2009, around 13:00 hours (MDT) CHA discovered that facility backup west carbon bed had failed to shut off after 108 hours of usage after switching over to the east bed. It was determined that later that day that the bed had been in use for 120.71 hours. This is a potential violation of the facility Part B permit.

Around 13:00 hours facility personnel were in the process of changing out the west bed when they discovered that the bed was still pressurized. According to the system, the beds should have change over earlier that day at 00:04 hours when the west bed reached 105 hours. Both the local actuator and the DCS system showed the inlet valve to the west bed, SV4085, to be closed. Upon further inspection afterwards it was determined that the actuator had been installed improperly causing the inlet to stay open but sending a closed signal to the system. It should be noted that the east bed valve did open at 00:04 hours and when discovered the flow from the closed vent system was going to both beds. The actuator was repaired that same day. Additionally, inspections of the carbon beds were being done every 3 hours as required. The facility feels that the inspector did the inspection correctly but they should have noticed the pressure still on the bed even though the actuator showed the valve shut. Remedial training will be undertaken for all operators who will be performing these inspections of the back-up carbon system making sure they understand that if the inlet valve is closed that there should be no pressure on the bed.

Though the facility went over the hours of use on this bed by 12.93 hours, the facility feels strongly that there was no incident of non-compliance with regards to emissions from the operations being vented to the system. While the inlet to the west bed did not



close at 105 hours, the inlet to the east bed did open. The flow from the closed vent would have been split equally between the two beds so essentially the time over to the west bed would have been half or 3.47 hours over the 108. The 108 hours of use for each bed would equate to 97.2% saturation of the carbon bed. The time that the system went over would have been equivalent to 100.3% saturation of the bed but the total hours of 108 hours was based on volatile organic concentrations from the bulk solids building that were sampled during regular operations when the bulk solids building is in full operation and organic concentrations in the vent would be at the highest level. During this incident the operation was in the middle of a scheduled turn-around where the kiln is shut down and operations are severely cutback in order to perform maintenance on the incinerator and associated systems. During the 9.93 hours after the west bed should have switched off there were six roll-off boxes dumped into the bulk solids building during that time, there was no operation of the shredder or the clamshell in the building and tank 404A was at 15% capacity, tank 404B was at 10% capacity and tank 403 was at 1% capacity. Additionally, after it was discovered that the west bed did not shut down, personnel went and measured the exhaust of the bed with a Draeger sampling tube for THC, which is what is used for periodic inspections of the beds when they are in use. The reading was less than 100 ppm which is the minimum detection level of the sample tube, so though the west bed was used past its time period there was no break through of organic material from the bed during the period beyond 108 hours.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
October 7, 2009

*express*  
**RECEIVED**

OCT 19 2009  
UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE  
*2009. 03242*

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On October 14, 2009, CHA discovered that 67 containers of infectious waste that was at the facility for an 8<sup>th</sup> day was not being refrigerated. This is in violation of the facility Part B permit Condition 3.D.22.

The material in question came to the facility on October 7, 2009. On October 12, 2009, the containers were transferred to the facility refrigerated trailer but the refrigeration unit was never turned on. On October 14, 2009, when the error was discovered the unit was turned on at approximately 8:00 am but technical issues held up having the material below 40F until approximately 12:30 pm.

The individuals responsible were aware that the material was on the refrigerated trailer. Since the material was initially moved there when it was onsite less than 7 days, there was no reason to turn the trailer on or perform daily checks of the temperature. These same individuals also failed to review daily reports that would have alerted to how long the material was onsite. Actions have been taken with these individuals but to assure further instances do not occur, the facility will assure that whenever materials are transferred to the trailer that the trailer is turned on, regardless if the material has been on site less than 7 days.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

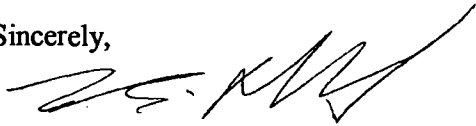
Mr. Dennis Downs  
October 16, 2009

Page 2

belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
October 22, 2009

*express*  
**RECEIVED**  
OCT 26 2009  
UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE  
2009.03308

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On October 19, 2009, CHA discovered that 26 containers of infectious waste that was at the facility for an 8<sup>th</sup> day was not being refrigerated. This is in violation of the facility Part B permit Condition 3.D.22.

The material in question came to the facility on October 12, 2009. On October 19, 2009, the containers were still waiting to be unloaded. Personnel had the trailer unloaded and transferred the containers to either a refrigerated trailer or to the conveyor to be incinerated at approximately 17:30 MDT. All of the containers were incinerated later that same day.

Due to the fact that the facility generates a daily report that shows the receiving dates of all infectious waste at the facility, there was no reason that this item was missed. Personnel assigned the task to monitor this report had either failed to do so over the weekend or had failed to communicate the status of these containers. Actions have been taken with the responsible individuals. The facility will make better efforts at making sure that individuals monitor the daily reports even over the weekends.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for

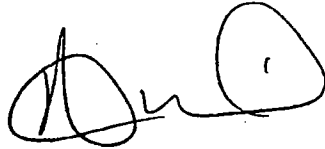
Mr. Dennis Downs  
October 22, 2009

Page 2

submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



*on behalf of Lisa Scales*

Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029

December 18, 2009

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On December 16, 2009, CHA discovered that the facility had not performed the daily E-building sump inspections, the daily gas cylinder staging area inspections or the daily building inspections for buildings E2, E3, E6 and E7 for December 16, 2009.

The responsibility for this task had assigned to the BZCON Operators who's main responsibility was to make sure the container feed conveyor for the incinerator is kept full. During the day of December 16, 2009, there was no BZCON Operator on the day shift, the supervisor for the area was also on vacation and the night BZCON Operator has just returned from an extended leave where he was unaware that he was responsible for the inspections that evening. The manager and supervisors responsible for this error have been consoled about this incident. Moving forward, the supervisors and manager will be placing the inspections their areas are responsible for on their Outlook Calendars as a daily task that will provide them with daily reminders to make sure they check that the inspections are either done before they leave the facility for the day or that someone is aware that the inspections still need to be done.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*Express*  
**RECEIVED**

DEC 22 2009

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE


*2009.03082*

Mr. Dennis Downs  
December 17, 2009

Page 2

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029

January 22, 2010

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On January 14, 2010, CHA discovered that the facility personnel the previous night had pumped 3-330 gallon totes of waste through the facility educt system but, due to the size of the containers, personnel had done so with the totes outside the educt glove box in violation of Attachment 8, Section 4.5.6 of the facility Part B Permit.

The facility determined that personnel involved with this incident had not properly followed the procedure for the operating this system. The procedure contains steps that assure that containers being pumped through this system are done so with the glove box door shut and that the box would be under a vacuum of at least 1" of water column. Personnel involved have been spoken to about this incident and appropriate disciplinary actions have been taken. Additionally, the procedure will be reformatted so that the permit conditions are emphasized and all crews responsible for this operation will be retrained to the updated procedure. The facility anticipates having the procedure updated by the end of January and retraining shortly afterwards.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*Express*  
**RECEIVED**

**JAN 25 2010**  
**UTAH DIVISION OF**  
**SOLID & HAZARDOUS WASTE**  
*2010.00406*

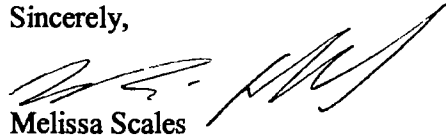


Mr. Dennis Downs  
January 22, 2010

Page 2

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department

HAND DELIVERED

FEB 18 2010

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE

2010.00754



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
February 17, 2010

Mr. Dennis R. Downs, Executive Secretary  
Solid and Hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

RE: Notice of Non-Compliance  
Clean Harbors Aragonite, LLC ("CHA")  
EPA ID: UTD 981 552 177

Dear Mr. Downs:

On February 9, 2010, CHA discovered that a load of waste, vans SLT 30051, that had truck-to-truck ("TTT") pieces was initially dropped at the facility January 29, 2010, putting these loads beyond their 10 days at a single transfer facility. This is a violation of 40CFR 263.12.

The load was scheduled to have been taken off-site February 5, 2010, but due to a miscommunication between the facility and someone in the transportation group the load was never picked up. The load was shipped offsite February 2, 2010. The person responsible for the outbound shipments has been counseled over this incident. He will now have to maintain a daily inventory of all TTTs that pass through the facility to assure they are offsite by the 10<sup>th</sup> day.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,

A handwritten signature in dark ink, appearing to read "Melissa Scales".

Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: S. Tuber, EPA Region VIII ; M. Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
February 25, 2010

*express*  
**RECEIVED**

MAR 01 2010

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE  
*2010.00936*

Mr. Dennis R. Downs, Executive Secretary  
Solid and Hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On February 17, 2010, CHA discovered that facility personnel who had been bulking up flo-bins of waste into bulk solids tank T-403 had not correctly measured the LEL of the bins before unloading them to the tank. Personnel had been measuring the LEL of the bins from the bottom of the bin near the discharge chute when they should have taken the measurement from the top of the tank. After 4 of the bins had been unloaded the LEL alarm for the tank went off in the building. When the LEL was checked at the top on the remaining bins, it was discovered that an LEL reading of 100% was present, which exceeds the permit conditions for this tank. Those bins that had not been bulked up were pulled from the job and taken to E4 REPACK room to be repacked prior to incineration. The material already in the tank is being mixed with dirt to bring down the LEL and will be fed direct to the kiln when it is deemed safe to do so.

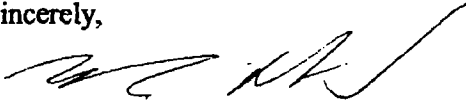
An investigation into this incident found that personnel doing the bulk up did not understand that LEL measurements should be taken from the top of a container since flammable gases, generally being lighter than air, would accumulate in the container headspace. To correct this the facility, as of February 22, 2010, has updated both the Bulk Up SOP and the Solid Bulking SOP to include procedures for performing the LEL measurement. Both of these SOPs are currently being reviewed by the facility management team and should be implemented within the next week. Additionally, the Bulk Up qualification cards were pulled for operators who were qualified up to the point of this incident. The qualification cards for each operator will be reviewed, with extra emphasis on understanding what a LEL measurement is and the importance of performing the measurement correctly. The facility hopes to have all operators requalified on bulk up by April 1, 2010. Lastly due to these bins being a little different

than what an operator normally encounters for this process, an additional corrective action is being implemented that will have managers and supervisors trained by the Health and Safety Manager on how to do a Job Safety Briefing prior to doing performing a task that is a little outside the original scope of the process. The facility hopes to have this training done over the next month.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: S. Tuber, EPA Region VIII  
M. Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
March 3, 2010

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On February 25, 2010, CHA discovered that 3 containers of infectious waste (tracking numbers 20323291-93) that were at the facility for an 9<sup>th</sup> day after being received were not being refrigerated. This is in violation of the facility Part B permit Condition 3.D.22.

The material in question came to the facility on February 17, 2010. On February 25, 2010, it was discovered that the containers were still waiting to be unloaded. All 3 containers were unloaded and burned that same morning.

The facility does generate a report that shows what infectious wastes are onsite and the times the materials arrive at the site, their location and the times when they are finally incinerated. The information for this report is gathered from load receiving reports that are generated when loads arrive at the facility and are entered into the facility tracking system. Due to work loads of the Compliance Guards, not all loads are entered into the system the same day that they arrive but when the load is eventually entered actual date it arrives is backdated in the system. Since infectious waste has a 7 day window for it to be received at the facility and then incinerated, the load packs for each trailer brought in is reviewed when it first arrives and those loads with infectious waste are suppose to be flagged and entered into the system as soon as possible so facility personnel can plan to get the load taken care of within the 7 day period. For this load, the Compliance Guard who reviewed the load pack overlooked the infectious materials. This person, as well as their supervisor, has been counseled about this incident.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified

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**MAR 08 2010**

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE

*2010.01041*

Mr. Dennis Downs  
March 3, 2010

Page 2

personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
March 17, 2010

*Express*  
**RECEIVED**

MAR 22 2010  
UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE  
2010.01192

Mr. Dennis R. Downs, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On March 11, 2010, CHA discovered that 2 containers of infectious waste (tracking numbers 20465886 and 20345801) that were at the facility for an 8<sup>th</sup> day after being received were not being refrigerated. This is in violation of the facility Part B permit Condition 3.D.22.

The material in question came to the facility on March 4, 2010. On March 11, 2010, the two containers were sitting in ABC area of E4 waiting to be loaded on the breezeway conveyor so they could be fed to the kiln. Though both of these containers had been approved for acceptance March 10, 2010, and moved to the area in ABC that same night, neither of these containers had been analytical put into the system so neither container could have been fed to the incinerator. Personnel working that evening should have moved the containers to a refrigerated trailer until the analytical issues were resolved.

The main cause of this problem was lack of communication between Receiving and Production personnel. Receiving should have informed Production as to the urgency to burn the containers that evening or else have them moved to the refrigerated trailer since both were on their 7<sup>th</sup> day. To prevent further occurrences, personnel are developing instructions on how to identify, communicate and process infectious medical waste that is on its 7<sup>th</sup> day at the site. The facility is hoping to have these instructions completed by March 26, 2010. After these have been developed, personnel with responsibilities for handling this type of waste will be trained to these new instructions. Further, a turnover checklist will be developed for the BZCON Operators. This checklist will be given to each shift before they start and will identify issues that need to be passed along from one shift to the next, which will include also infectious waste that has to be burned or stored



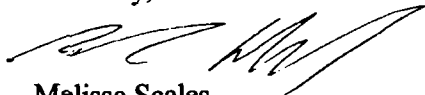
on an appropriate trailer. The facility hopes to have this checklist developed and in use by March 17, 2010.

Another issue identified for infectious waste that caused this issue is that Receiving personnel do not always unload trailers in a timely enough fashion. Though the loads are taken care of within the 7 days, there are times that waste are unloaded on their 7<sup>th</sup> day and if any problems are encountered, the facility risks having a compliance issue. To resolve this, Receiving personnel are now to offload all plant received trailers of infectious waste by the 4<sup>th</sup> day after it arrives at the facility. This will provide plant personnel adequate time to properly receive the containers and resolve any issues that could hold up timely incineration of the material.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029  
March 23, 2010

Mr. Dennis R. Downs, Executive Secretary  
Solid and Hazardous Waste Control Board  
Department of Environmental Quality  
288 North 1460 West  
Salt Lake City, Utah 84114

**RE: Notice of Non-Compliance**  
**Clean Harbors Aragonite, LLC ("CHA")**  
**EPA ID: UTD 981 552 177**

Dear Mr. Downs:

On March 15, 2010, CHA discovered that a roll-off container of bulk solids was approved for acceptance on March 11, 2010, and was still sitting in the staging area as opposed to being offloaded to an appropriate tank, dropped into a proper storage area or shipped offsite. This is in violation of the facility Part B permit.

The facility RCRA Part B Permit allows the facility to stage roll-off containers of solids by the east fence across from the bulk solids building up to 15 days while the container is in the process of being accepted. Once accepted, the facility needs to either off-load the box into an appropriate tank, store on the containment pad outside the bulk solids building, or ship the container offsite. The plan for this box was to ship it offsite to the Clive facility but when the facility attempted to do so it was discovered that the original profile had restrictions on it that prevented it from being shipping it offsite. At that point the facility should have stored the box on the pad while working through the issues on shipping it offsite but personnel failed to do this until it was brought to their attention March 15, 2010. The parties responsible for this incident have been counseled and retrained to the requirements for bulk solid loads.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for

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**MAR 29 2010**

UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE

2010.01247

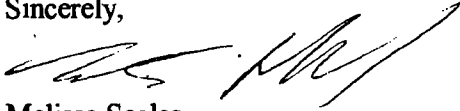
Mr. Dennis Downs  
March 23, 2010

Page 2

submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Melissa Scales  
General Manager  
Clean Harbors Aragonite, LLC

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, Tooele County Health Department

**HAND DELIVERED**

**SEP 13 2010**

**UTAH DIVISION OF  
SOLID & HAZARDOUS WASTE**

**2010.03101**



Clean Harbors Aragonite, LLC.  
11600 N Aptus Road  
P.O. Box 1339  
Aragonite, UT 84029

September 13, 2010

Mr. Scott T. Anderson, Executive Secretary  
Solid and hazardous Waste Control Board  
Department of Environmental Quality  
195 North 1950 West  
Salt Lake City, Utah 84116

**RE: Non-Compliance Notification  
Clean Harbors Aragonite, LLC ("CHA")  
EPA ID: UTD 981 552 177**

Dear Mr. Anderson:

This letter serves as written notification that the facility had failed to monitor the 2<sup>nd</sup> Stage Rundown pH on the wet chemical scrubber in violation of 5.D.19 of the CHA State Permit. The facility is submitting this information under the requirements, I.Q.1, of the CHA State Permit.

Description and/or Cause: Due to restricted flow in the wet chemical scrubber, Aragonite went off waste September 1, 2010, and began cooling down the incinerator to perform maintenance on the scrubber unit, in accordance with the facility Startup, Shutdown and Malfunction Plan ("SSMP"). On September 3, 2010, with the repairs completed on the scrubber the incinerator began heating up, which was completed late September 4, 2010. Waste was brought back online at approximately 19:18 MDT. At approximately 23:30 MDT it was discovered that the 2<sup>nd</sup> stage rundown pH probes, which had been removed and placed in a bucket of water during the scrubber repairs, had not been reinstalled. Upon discovery, waste was stopped to the incinerator and the pH probes were reinstalled. Operations were resumed at approximately 23:40 MDT.

Corrective Actions:

Normally the I&E operator who will take out the pH probes during the shut-down would be the one who would be putting back the probes during start-up. During this event only one set of probes were removed from service and the operator who took out the probes was not around during start-up. It was not properly communicated to the other operator that any pH probes had been removed.

Personnel who were involved have been counseled. Additionally, a checklist will be used by I&E personnel for start-up that will include, among other items, checking the pH probes. Training on this SSMP was started September 8, 2010, and will continue until all affected personnel have been trained.

As an additional precaution, when the pH probes are taken out of service from this point on the activity will be put in the "Forced Jumper Log". This log is reviewed as part of the SSMP and if the probes would have been listed as "forced" the item would have been caught before the operation went back to waste.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please feel free to contact Jeff Mensinger at (435) 884-8170.

Sincerely,



Michael W. Marlowe  
General Manager  
Clean Harbors Aragonite, LLC  
(435)884-8351

cc: Stephen S. Tuber, EPA Region VIII  
Myron Bateman, EHS, MPA, Health Officer, Tooele County Health Department

# Attachment 1

Aragonite  
September 11, 2010 daily slag composite

## LIMS # 1009030

Document = HSWA

Date Received = 9/8/10 11:27

Group =

Fingerprint Completed =

Type = Daily HSWA

Date Completed =

|    | Parameter         | Result | RL    | Sampled | Profile | Sample ID       |
|----|-------------------|--------|-------|---------|---------|-----------------|
| 01 | SbTCLP            | ND     | 0.08  |         | daily   | SL100911S01-S20 |
|    | AsTCLP            | ND     | 0.03  |         |         | SL100911S01-S20 |
|    | BaTCLP            | 0.270  | 0.01  |         |         | SL100911S01-S20 |
|    | BeTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | CdTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | CrTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | PbTCLP            | ND     | 0.03  |         |         | SL100911S01-S20 |
|    | HgTCLP            | ND     | 0.025 |         |         | SL100911S01-S20 |
|    | NiTCLP            | 0.970  | 0.02  |         |         | SL100911S01-S20 |
|    | SeTCLP            | ND     | 0.04  |         |         | SL100911S01-S20 |
|    | AgTCLP            | ND     | 0.06  |         |         | SL100911S01-S20 |
|    | TiTCLP            | ND     | 0.05  |         |         | SL100911S01-S20 |
|    | VTCLP             | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | ZnTCLP            | ND     | 0.06  |         |         | SL100911S01-S20 |
|    | AR1016/1242 Sonic | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1268 Sonic      | ND     | .2    |         |         | SL100911S01-S20 |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | SL100911S01-S20 |
|    | TCMX PCB Sonic    | 55     |       |         |         | SL100911S01-S20 |
|    | DCB PCB Sonic     | 110    |       |         |         | SL100911S01-S20 |
| 02 | SbTCLP            | 1.08   | 0.08  |         | daily   | RD100911S01-S06 |
|    | AsTCLP            | 3.02   | 0.03  |         |         | RD100911S01-S06 |
|    | BaTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | BeTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | CdTCLP            | 1.91   | 0.01  |         |         | RD100911S01-S06 |
|    | CrTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | PbTCLP            | 0.430  | 0.03  |         |         | RD100911S01-S06 |
|    | HgTCLP            | 0.047  | 0.025 |         |         | RD100911S01-S06 |
|    | NiTCLP            | 0.430  | 0.02  |         |         | RD100911S01-S06 |
|    | SeTCLP            | 0.360  | 0.04  |         |         | RD100911S01-S06 |
|    | AgTCLP            | 0.160  | 0.06  |         |         | RD100911S01-S06 |
|    | TiTCLP            | ND     | 0.05  |         |         | RD100911S01-S06 |
|    | VTCLP             | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | ZnTCLP            | 25.5   | 0.06  |         |         | RD100911S01-S06 |
|    | AR1016/1242 Sonic | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1268 Sonic      | ND     | .2    |         |         | RD100911S01-S06 |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | RD100911S01-S06 |
|    | TCMX PCB Sonic    | 50     |       |         |         | RD100911S01-S06 |
|    | DCB PCB Sonic     | 110    |       |         |         | RD100911S01-S06 |
| 03 | HgWaste           | 44.8   | 0.055 |         | daily   | RD100911S01-S06 |
|    | AR1016/1242 Sonic | ND     | 0.2   |         | daily   | 411765          |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1268 Sonic      | ND     | .2    |         |         | 411765          |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | 411765          |
|    | TCMX PCB Sonic    | 55     |       |         |         | 411765          |
|    | DCB PCB Sonic     | 110    |       |         |         | 411765          |

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 2

Aragonite  
September 11, 2010 daily residue composite



## LIMS # 1009030

Document = HSWA

Date Received = 9/8/10 11:27

Group =

Fingerprint Completed =

Type = Daily HSWA

Date Completed = 9/8/10 11:27

|    | Parameter         | Result | RL    | Sampled | Profile | Sample ID       |
|----|-------------------|--------|-------|---------|---------|-----------------|
| 01 | SbTLCP            | ND     | 0.08  |         | daily   | SL100911S01-S20 |
|    | AsTCLP            | ND     | 0.03  |         |         | SL100911S01-S20 |
|    | BaTCLP            | 0.270  | 0.01  |         |         | SL100911S01-S20 |
|    | BeTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | CdTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | CrTCLP            | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | PbTCLP            | ND     | 0.03  |         |         | SL100911S01-S20 |
|    | HgTCLP            | ND     | 0.025 |         |         | SL100911S01-S20 |
|    | NiTCLP            | 0.970  | 0.02  |         |         | SL100911S01-S20 |
|    | SeTCLP            | ND     | 0.04  |         |         | SL100911S01-S20 |
|    | AgTCLP            | ND     | 0.06  |         |         | SL100911S01-S20 |
|    | TiTCLP            | ND     | 0.05  |         |         | SL100911S01-S20 |
|    | VTCLP             | ND     | 0.01  |         |         | SL100911S01-S20 |
|    | ZnTCLP            | ND     | 0.06  |         |         | SL100911S01-S20 |
|    | AR1016/1242 Sonic | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | SL100911S01-S20 |
|    | AR1268 Sonic      | ND     | .2    |         |         | SL100911S01-S20 |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | SL100911S01-S20 |
|    | TCMX PCB Sonic    | 55     |       |         |         | SL100911S01-S20 |
|    | DCB PCB Sonic     | 110    |       |         |         | SL100911S01-S20 |
| 02 | SbTLCP            | 1.08   | 0.08  |         | daily   | RD100911S01-S06 |
|    | AsTCLP            | 3.02   | 0.03  |         |         | RD100911S01-S06 |
|    | BaTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | BeTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | CdTCLP            | 1.91   | 0.01  |         |         | RD100911S01-S06 |
|    | CrTCLP            | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | PbTCLP            | 0.430  | 0.03  |         |         | RD100911S01-S06 |
|    | HgTCLP            | 0.047  | 0.025 |         |         | RD100911S01-S06 |
|    | NiTCLP            | 0.430  | 0.02  |         |         | RD100911S01-S06 |
|    | SeTCLP            | 0.360  | 0.04  |         |         | RD100911S01-S06 |
|    | AgTCLP            | 0.160  | 0.06  |         |         | RD100911S01-S06 |
|    | TiTCLP            | ND     | 0.05  |         |         | RD100911S01-S06 |
|    | VTCLP             | ND     | 0.01  |         |         | RD100911S01-S06 |
|    | ZnTCLP            | 25.5   | 0.06  |         |         | RD100911S01-S06 |
|    | AR1016/1242 Sonic | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | RD100911S01-S06 |
|    | AR1268 Sonic      | ND     | .2    |         |         | RD100911S01-S06 |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | RD100911S01-S06 |
|    | TCMX PCB Sonic    | 50     |       |         |         | RD100911S01-S06 |
|    | DCB PCB Sonic     | 110    |       |         |         | RD100911S01-S06 |
| 03 | HgWaste           | 44.8   | 0.055 |         | daily   | RD100911S01-S06 |
| 04 | AR1016/1242 Sonic | ND     | 0.2   |         | daily   | 411765          |
|    | AR1248 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1254 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1260 Sonic      | ND     | 0.2   |         |         | 411765          |
|    | AR1268 Sonic      | ND     | .2    |         |         | 411765          |
|    | Total PCB Sonic   | ND     | 0.4   |         |         | 411765          |
|    | TCMX PCB Sonic    | 55     |       |         |         | 411765          |
|    | DCB PCB Sonic     | 110    |       |         |         | 411765          |

# Attachment 3

## Aragonite

September 6-12, 2010 weekly slag and residue  
composites (volatiles, semivolatiles,  
nonhalogenated organics, herbicides,  
pesticides, and cyanide)

## ANALYTICAL REPORT

Job Number: 280-7326-1

Job Description: Clean Harbors Aragonite LDR

For:

Clean Harbors Environmental Services Inc  
11600 North Aptus Road  
Exit 56  
Salt Lake City, UT 84101  
Attention: Mr. Dave Lunt

*Lori Parsons*

Approved for release  
Lori A Parsons  
Project Manager I  
9/27/2010 3:55 PM

Lori A Parsons  
Project Manager I  
lori.parsons@testamericainc.com  
09/27/2010

cc: Ms. Heidi Stoker

I certify that the data presented in this report are accurate, complete, and meet the minimum quality assurance standards in 40-CFR 136, 40-CFR 141, and/or SW846. The test results in this report relate only to the samples in this report and have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAP. An assessment of the quality of the data, noting any exceptions, outliers, and/or problems encountered has been narrated herein. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

These data and reporting limits are being used specifically to meet the needs of this project. All RLs are supported by TestAmerica Denver's Method Detection Limits (MDLs). Reporting limits in this report are at or above the MDL.

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## CASE NARRATIVE

Client: Clean Harbors Environmental Services Inc

Project: Clean Harbors Aragonite LDR

Report Number: 280-7326-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

The samples were received on 09/14/2010; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 17.0 C.

The samples were received at the laboratory at an elevated temperature of 17.0C. It should be noted that the blue ice had melted prior to arrival at the laboratory.

### VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SL100906-1009012 (280-7326-1) and RD100906-1009012 (280-7326-2) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/15/2010.

Sample RD100906-100912 (280-7326-2) was extracted at 2.5g instead of 5g due to the presence of ash material. Reporting limits have been adjusted accordingly.

The samples exhibited surrogate recoveries below the control limits for 4-bromofluorobenzene and toluene-d8, due to matrix interference.

The LCS and LCSD associated with analytical batch 31597 exhibited an RPD value and a percent recovery in the MSD above the control limits for trans-1,2-dichloroethene. This is an indicator of a possible high bias. The samples were non-detected for trans-1,2-dichloroethene; therefore the data has been reported.

The MS/MSD associated with analytical batch 31597 was performed on sample SL100906-1009012 (280-7326-1) and exhibited percent recoveries below the control limits for 1,3-dichlorobenzene, and surrogates toluene-d8 and 4-bromofluorobenzene. The MS exhibited a percent recovery below the control limits for chlorobenzene. The acceptable LCS and LCSD analyses data indicated the analytical system was within control; therefore corrective action was deemed unnecessary.

The continuing calibration verification (CCV) associated with analytical batch 31597 exhibited percent differences above the control limits for trichlorofluoromethane (+78.5%). The laboratory SOP allows for six non-CCC compounds to be outside of control limits; therefore the data has been qualified and reported.

No other difficulties were encountered during the VOC analyses.

All other quality control parameters were within the acceptance limits.

### SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SL100906-1009012 (280-7326-1) and RD100906-1009012 (280-7326-2) were analyzed for semivolatile organic compounds (GC-MS) in accordance with SW846 8270C. The samples were prepared on 09/14/2010 and analyzed on 09/23/2010 and 09/24/2010.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. This reporting limit is being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

Sample RD100906-1009012 (280-7326-2) exhibited a surrogate recovery below the control limits for terphenyl-d14 due to matrix interference.

No other difficulties were encountered during the semivolatile organic compounds (GC-MS) analyses.



All other quality control parameters were within the acceptance limits.

#### **ORGANICS BY DIRECT AQUEOUS INJECTION**

Samples SL100906-1009012 (280-7326-1) and RD100906-1009012 (280-7326-2) were analyzed for organics by direct aqueous injection in accordance with EPA SW-846 Method 8015B - DAI. The samples were leached on 09/15/2010 and analyzed on 09/15/2010.

No difficulties were encountered during the alcohols analyses.

All quality control parameters were within the acceptance limits.

#### **CHLORINATED PESTICIDES**

Samples SL100906-1009012 (280-7326-1) and RD100906-1009012 (280-7326-2) were analyzed for chlorinated pesticides in accordance with SW846 8081A. The samples were prepared on 09/14/2010 and analyzed on 09/16/2010.

Sample RD100906-1009012 (280-7326-2) exhibited a surrogate recovery below the control limits for tetrachloro-m-xylene due to matrix interference.

Sample SL100906-1009012 (280-7326-1) exhibited an RPD value between the primary and secondary columns greater than 40% for endosulfan sulfate. The lower of the two values have been reported.

The MS/MSD associated with analytical batch 31865 was performed on sample SL100906-1009012 (280-7326-1) and exhibited percent recoveries above the control limits for dieldrin. The acceptable LCS and LCSD analyses data indicated the analytical system was within control; therefore corrective action was deemed unnecessary.

No other difficulties were encountered during the chlorinated pesticides analyses.

All other quality control parameters were within the acceptance limits.

#### **CHLORINATED HERBICIDES**

Samples SL100906-1009012 (280-7326-1) and RD100906-1009012 (280-7326-2) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 09/16/2010 and analyzed on 09/22/2010.

No difficulties were encountered during the herbicides analyses.

All quality control parameters were within the acceptance limits.

## EXECUTIVE SUMMARY - Detections

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

| Lab Sample ID<br>Analyte         | Client Sample ID | Result / Qualifier |   | Reporting<br>Limit | Units | Method |
|----------------------------------|------------------|--------------------|---|--------------------|-------|--------|
| 280-7326-1<br>Endosulfan sulfate | SL100906-1009012 | 1.7                | p | 1.7                | ug/Kg | 8081A  |

## METHOD SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

| Description  | Lab Location | Method      | Preparation Method |
|--|--------------|-------------|--------------------|
| <b>Matrix: Solid</b>                                     |              |             |                    |
| Volatile Organic Compounds (GC/MS)                       | TAL DEN      | SW846 8260B |                    |
| Purge and Trap   | TAL DEN      |             | SW846 5030B        |
| Semivolatile Organic Compounds (GC/MS)                   | TAL DEN      | SW846 8270C |                    |
| Ultrasonic Extraction                                    | TAL DEN      |             | SW846 3550C        |
| Nonhalogenated Organic Compounds - Direct Injection (GC) | TAL DEN      | SW846 8015B |                    |
| Deionized Water Leaching Procedure                       | TAL DEN      |             | ASTM DI Leach      |
| Organochlorine Pesticides (GC)                           | TAL DEN      | SW846 8081A |                    |
| Ultrasonic Extraction                                    | TAL DEN      |             | SW846 3550C        |
| Herbicides (GC)  | TAL DEN      | SW846 8151A |                    |
| Extraction (Herbicides)                                  | TAL DEN      |             | SW846 8151A        |

### Lab References:

TAL DEN = TestAmerica Denver

### Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

| Method      | Analyst             | Analyst ID |
|-------------|---------------------|------------|
| SW846 8260B | Zhou, Huaqing       | HZ         |
| SW846 8270C | Kiekel, Daniel C    | DCK        |
| SW846 8015B | Ream, Brian E       | BER        |
| SW846 8081A | Lahr, Carrie C      | CCL        |
| SW846 8151A | Kellison, Michael P | MK         |

## SAMPLE SUMMARY

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

| Lab Sample ID | Client Sample ID | Client Matrix | Date/Time<br>Sampled | Date/Time<br>Received |
|---------------|------------------|---------------|----------------------|-----------------------|
| 280-7326-1    | SL100906-1009012 | Solid         | 09/13/2010 1030      | 09/14/2010 0930       |
| 280-7326-2    | RD100906-1009012 | Solid         | 09/13/2010 1045      | 09/14/2010 0930       |

## **SAMPLE RESULTS**



# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8260B Volatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8260B           | Analysis Batch: | 280-31597 | Instrument ID:         | MSV_P   |
| Preparation:   | 5030B           | Prep Batch:     | 280-31337 | Lab File ID:           | P1077.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 4.987 g |
| Date Analyzed: | 09/15/2010 1636 |                 |           | Final Weight/Volume:   | 1000 mL |
| Date Prepared: | 09/14/2010 1419 |                 |           |                        |         |

| Analyte                     | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL    |
|-----------------------------|--------------------|----------------|-----------|-------|
| 1,1,1,2-Tetrachloroethane   |                    | ND             |           | 250   |
| 1,1,1-Trichloroethane       |                    | ND             |           | 250   |
| 1,1,2,2-Tetrachloroethane   |                    | ND             |           | 250   |
| 1,1,2-Trichloroethane       |                    | ND             |           | 250   |
| 1,1-Dichloroethane          |                    | ND             |           | 250   |
| 1,1-Dichloroethene          |                    | ND             |           | 250   |
| 1,2,3-Trichloropropane      |                    | ND             |           | 250   |
| 1,2-Dibromo-3-Chloropropane |                    | ND             |           | 500   |
| 1,2-Dibromoethane           |                    | ND             |           | 250   |
| 1,2-Dichloroethane          |                    | ND             |           | 250   |
| 1,2-Dichloropropane         |                    | ND             |           | 250   |
| 1,4-Dioxane                 |                    | ND             |           | 25000 |
| 2-Butanone (MEK)            |                    | ND             |           | 1000  |
| 2-Hexanone                  |                    | ND             |           | 1000  |
| 4-Methyl-2-pentanone (MIBK) |                    | ND             |           | 1000  |
| Acetone                     |                    | ND             |           | 1000  |
| Acetonitrile                |                    | ND             |           | 5000  |
| n-Butanol                   |                    | ND             |           | 10000 |
| Acrolein                    |                    | ND             |           | 5000  |
| Acrylonitrile               |                    | ND             |           | 5000  |
| Allyl chloride              |                    | ND             |           | 500   |
| Benzene                     |                    | ND             |           | 250   |
| Bromoform                   |                    | ND             |           | 250   |
| Bromomethane                |                    | ND             |           | 500   |
| Carbon disulfide            |                    | ND             |           | 250   |
| Carbon tetrachloride        |                    | ND             |           | 250   |
| Chlorobenzene               |                    | ND             |           | 250   |
| Chlorodibromomethane        |                    | ND             |           | 250   |
| Chloroethane                |                    | ND             |           | 500   |
| Chloroform                  |                    | ND             |           | 250   |
| Chloromethane               |                    | ND             |           | 500   |
| 2-Chloro-1,3-butadiene      |                    | ND             |           | 250   |
| cis-1,3-Dichloropropene     |                    | ND             |           | 250   |
| Dibromomethane              |                    | ND             |           | 250   |
| Dichlorobromomethane        |                    | ND             |           | 250   |
| Dichlorodifluoromethane     |                    | ND             |           | 500   |
| Ethyl methacrylate          |                    | ND             |           | 250   |
| Ethylbenzene                |                    | ND             |           | 250   |
| Iodomethane                 |                    | ND             |           | 250   |
| Isobutyl alcohol            |                    | ND             |           | 10000 |
| Methacrylonitrile           |                    | ND             |           | 2500  |
| Methyl methacrylate         |                    | ND             |           | 250   |
| Methylene Chloride          |                    | ND             |           | 250   |
| m-Xylene & p-Xylene         |                    | ND             |           | 250   |
| o-Xylene                    |                    | ND             |           | 130   |
| Propionitrile               |                    | ND             |           | 1000  |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8260B Volatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8260B           | Analysis Batch: | 280-31597 | Instrument ID:         | MSV_P   |
| Preparation:   | 5030B           | Prep Batch:     | 280-31337 | Lab File ID:           | P1077.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 4.987 g |
| Date Analyzed: | 09/15/2010 1636 |                 |           | Final Weight/Volume:   | 1000 mL |
| Date Prepared: | 09/14/2010 1419 |                 |           |                        |         |

| Analyte                        | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|--------------------------------|--------------------|----------------|-----------|------|
| Styrene                        |                    | ND             |           | 250  |
| Tetrachloroethene              |                    | ND             |           | 250  |
| Toluene                        |                    | ND             |           | 250  |
| trans-1,2-Dichloroethene       |                    | ND             | *         | 130  |
| trans-1,3-Dichloropropene      |                    | ND             |           | 250  |
| trans-1,4-Dichloro-2-butene    |                    | ND             |           | 250  |
| Trichloroethene                |                    | ND             |           | 250  |
| Trichlorofluoromethane         |                    | ND             |           | 500  |
| Cyclohexanone                  |                    | ND             |           | 4000 |
| Vinyl acetate                  |                    | ND             |           | 500  |
| Vinyl chloride                 |                    | ND             |           | 500  |
| Xylenes, Total                 |                    | ND             |           | 250  |
| Ethyl acetate                  |                    | ND             |           | 500  |
| Ethyl ether                    |                    | ND             |           | 500  |
| 1,1,2-Trichlorotrifluoroethane |                    | ND             |           | 1000 |

| Surrogate                    | %Rec | Qualifier | Acceptance Limits |
|------------------------------|------|-----------|-------------------|
| 1,2-Dichloroethane-d4 (Surr) | 71   |           | 50 - 139          |
| Dibromofluoromethane (Surr)  | 72   |           | 60 - 133          |
| Toluene-d8 (Surr)            | 49   | X         | 68 - 143          |
| 4-Bromofluorobenzene (Surr)  | 38   | X         | 62 - 133          |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8260B Volatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8260B           | Analysis Batch: | 280-31597 | Instrument ID:         | MSV_P   |
| Preparation:   | 5030B           | Prep Batch:     | 280-31337 | Lab File ID:           | P1078.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 2.541 g |
| Date Analyzed: | 09/15/2010 1656 |                 |           | Final Weight/Volume:   | 1000 mL |
| Date Prepared: | 09/14/2010 1419 |                 |           |                        |         |

| Analyte                     | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL    |
|-----------------------------|--------------------|----------------|-----------|-------|
| 1,1,1,2-Tetrachloroethane   |                    | ND             |           | 490   |
| 1,1,1-Trichloroethane       |                    | ND             |           | 490   |
| 1,1,2,2-Tetrachloroethane   |                    | ND             |           | 490   |
| 1,1,2-Trichloroethane       |                    | ND             |           | 490   |
| 1,1-Dichloroethane          |                    | ND             |           | 490   |
| 1,1-Dichloroethene          |                    | ND             |           | 490   |
| 1,2,3-Trichloropropane      |                    | ND             |           | 490   |
| 1,2-Dibromo-3-Chloropropane |                    | ND             |           | 980   |
| 1,2-Dibromoethane           |                    | ND             |           | 490   |
| 1,2-Dichloroethane          |                    | ND             |           | 490   |
| 1,2-Dichloropropane         |                    | ND             |           | 490   |
| 1,4-Dioxane                 |                    | ND             |           | 49000 |
| 2-Butanone (MEK)            |                    | ND             |           | 2000  |
| 2-Hexanone                  |                    | ND             |           | 2000  |
| 4-Methyl-2-pentanone (MIBK) |                    | ND             |           | 2000  |
| Acetone                     |                    | ND             |           | 2000  |
| Acetonitrile                |                    | ND             |           | 9800  |
| n-Butanol                   |                    | ND             |           | 20000 |
| Acrolein                    |                    | ND             |           | 9800  |
| Acrylonitrile               |                    | ND             |           | 9800  |
| Allyl chloride              |                    | ND             |           | 980   |
| Benzene                     |                    | ND             |           | 490   |
| Bromoform                   |                    | ND             |           | 490   |
| Bromomethane                |                    | ND             |           | 980   |
| Carbon disulfide            |                    | ND             |           | 490   |
| Carbon tetrachloride        |                    | ND             |           | 490   |
| Chlorobenzene               |                    | ND             |           | 490   |
| Chlorodibromomethane        |                    | ND             |           | 490   |
| Chloroethane                |                    | ND             |           | 980   |
| Chloroform                  |                    | ND             |           | 490   |
| Chloromethane               |                    | ND             |           | 980   |
| 2-Chloro-1,3-butadiene      |                    | ND             |           | 490   |
| cis-1,3-Dichloropropene     |                    | ND             |           | 490   |
| Dibromomethane              |                    | ND             |           | 490   |
| Dichlorobromomethane        |                    | ND             |           | 490   |
| Dichlorodifluoromethane     |                    | ND             |           | 980   |
| Ethyl methacrylate          |                    | ND             |           | 490   |
| Ethylbenzene                |                    | ND             |           | 490   |
| Iodomethane                 |                    | ND             |           | 490   |
| Isobutyl alcohol            |                    | ND             |           | 20000 |
| Methacrylonitrile           |                    | ND             |           | 4900  |
| Methyl methacrylate         |                    | ND             |           | 490   |
| Methylene Chloride          |                    | ND             |           | 490   |
| m-Xylene & p-Xylene         |                    | ND             |           | 490   |
| o-Xylene                    |                    | ND             |           | 250   |
| Propionitrile               |                    | ND             |           | 2000  |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8260B Volatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8260B           | Analysis Batch: | 280-31597 | Instrument ID:         | MSV_P   |
| Preparation:   | 5030B           | Prep Batch:     | 280-31337 | Lab File ID:           | P1078.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 2.541 g |
| Date Analyzed: | 09/15/2010 1656 |                 |           | Final Weight/Volume:   | 1000 mL |
| Date Prepared: | 09/14/2010 1419 |                 |           |                        |         |

| Analyte                        | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|--------------------------------|--------------------|----------------|-----------|------|
| Styrene                        |                    | ND             |           | 490  |
| Tetrachloroethene              |                    | ND             |           | 490  |
| Toluene                        |                    | ND             |           | 490  |
| trans-1,2-Dichloroethene       |                    | ND             | *         | 250  |
| trans-1,3-Dichloropropene      |                    | ND             |           | 490  |
| trans-1,4-Dichloro-2-butene    |                    | ND             |           | 490  |
| Trichloroethene                |                    | ND             |           | 490  |
| Trichlorofluoromethane         |                    | ND             |           | 980  |
| Cyclohexanone                  |                    | ND             |           | 7900 |
| Vinyl acetate                  |                    | ND             |           | 980  |
| Vinyl chloride                 |                    | ND             |           | 980  |
| Xylenes, Total                 |                    | ND             |           | 490  |
| Ethyl acetate                  |                    | ND             |           | 980  |
| Ethyl ether                    |                    | ND             |           | 980  |
| 1,1,2-Trichlorotrifluoroethane |                    | ND             |           | 2000 |

| Surrogate                    | %Rec | Qualifier | Acceptance Limits |
|------------------------------|------|-----------|-------------------|
| 1,2-Dichloroethane-d4 (Surr) | 87   |           | 50 - 139          |
| Dibromofluoromethane (Surr)  | 90   |           | 60 - 133          |
| Toluene-d8 (Surr)            | 33   | X         | 68 - 143          |
| 4-Bromofluorobenzene (Surr)  | 12   | X         | 62 - 133          |



## Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8270C Semivolatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: | 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31384 | Lab File ID:           | K6698.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 30.3 g  |
| Date Analyzed: | 09/23/2010 2327 |                 |           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                 |           | Injection Volume:      | 0.5 uL  |

| Analyte                       | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|-------------------------------|--------------------|----------------|-----------|------|
| Acenaphthene                  |                    | ND             |           | 330  |
| Acenaphthylene                |                    | ND             |           | 330  |
| Acetophenone                  |                    | ND             |           | 330  |
| 2-Acetylaminofluorene         |                    | ND             |           | 3300 |
| Acrylamide                    |                    | ND             |           | 1600 |
| Aniline                       |                    | ND             |           | 330  |
| Anthracene                    |                    | ND             |           | 330  |
| Benzal chloride               |                    | ND             |           | 2700 |
| Benzo[a]anthracene            |                    | ND             |           | 330  |
| Benzo[a]pyrene                |                    | ND             |           | 330  |
| Benzo[b]fluoranthene          |                    | ND             |           | 330  |
| Benzo[g,h,i]perylene          |                    | ND             |           | 330  |
| Benzo[k]fluoranthene          |                    | ND             |           | 330  |
| Bis(2-chloroethoxy)methane    |                    | ND             |           | 330  |
| Bis(2-chloroethyl)ether       |                    | ND             |           | 330  |
| bis (2-chloroisopropyl) ether |                    | ND             |           | 330  |
| Bis(2-ethylhexyl) phthalate   |                    | ND             |           | 330  |
| 4-Bromophenyl phenyl ether    |                    | ND             |           | 330  |
| Butyl benzyl phthalate        |                    | ND             |           | 330  |
| Carbofuran phenol             |                    | ND             |           | 2700 |
| 4-Chloroaniline               |                    | ND             |           | 330  |
| 4-Chloro-3-methylphenol       |                    | ND             |           | 330  |
| 2-Chloronaphthalene           |                    | ND             |           | 330  |
| 2-Chlorophenol                |                    | ND             |           | 330  |
| Chrysene                      |                    | ND             |           | 330  |
| Dibenz(a,h)anthracene         |                    | ND             |           | 330  |
| 1,2-Dichlorobenzene           |                    | ND             |           | 330  |
| 1,3-Dichlorobenzene           |                    | ND             |           | 330  |
| 1,4-Dichlorobenzene           |                    | ND             |           | 330  |
| 2,4-Dichlorophenol            |                    | ND             |           | 330  |
| 2,6-Dichlorophenol            |                    | ND             |           | 330  |
| Diethyl phthalate             |                    | ND             |           | 650  |
| 2,4-Dimethylphenol            |                    | ND             |           | 330  |
| Dimethyl phthalate            |                    | ND             |           | 330  |
| Di-n-butyl phthalate          |                    | ND             |           | 330  |
| 1,4-Dinitrobenzene            |                    | ND             |           | 330  |
| 4,6-Dinitro-2-methylphenol    |                    | ND             |           | 1600 |
| 2,4-Dinitrophenol             |                    | ND             |           | 1600 |
| 2,4-Dinitrotoluene            |                    | ND             |           | 330  |
| 2,6-Dinitrotoluene            |                    | ND             |           | 330  |
| Di-n-octyl phthalate          |                    | ND             |           | 330  |
| Diphenylamine                 |                    | ND             |           | 330  |
| Disulfoton                    |                    | ND             |           | 1600 |
| Parathion                     |                    | ND             |           | 1600 |
| Famphur                       |                    | ND             |           | 650  |
| Fluoranthene                  |                    | ND             |           | 330  |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8270C Semivolatile Organic Compounds (GC/MS)

|                |                 |                           |                        |         |
|----------------|-----------------|---------------------------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch: 280-31384     | Lab File ID:           | K6698.D |
| Dilution:      | 1.0             |                           | Initial Weight/Volume: | 30.3 g  |
| Date Analyzed: | 09/23/2010 2327 |                           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                           | Injection Volume:      | 0.5 uL  |

| Analyte                                  | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|--|--------------------|----------------|-----------|------|
| Fluorene                                 |                    | ND             |           | 330  |
| Hexachlorobenzene                        |                    | ND             |           | 330  |
| Hexachlorobutadiene                      |                    | ND             |           | 330  |
| Hexachlorocyclopentadiene                |                    | ND             |           | 1600 |
| Hexachloroethane                         |                    | ND             |           | 330  |
| Hexachloropropene                        |                    | ND             |           | 3300 |
| Indeno[1,2,3-cd]pyrene                   |                    | ND             |           | 330  |
| Isosafrole                               |                    | ND             |           | 650  |
| Methapyrilene                            |                    | ND             |           | 1600 |
| 3-Methylcholanthrene                     |                    | ND             |           | 650  |
| 4,4'-Methylene bis(2-chloroaniline)      |                    | ND             |           | 330  |
| Methyl parathion                         |                    | ND             |           | 1600 |
| 2-Methylphenol                           |                    | ND             |           | 330  |
| 3 & 4 Methylphenol                       |                    | ND             |           | 330  |
| Naphthalene                              |                    | ND             |           | 330  |
| 2-Nitroaniline                           |                    | ND             |           | 1600 |
| 3-Nitroaniline                           |                    | ND             |           | 1600 |
| 4-Nitroaniline                           |                    | ND             |           | 1600 |
| Nitrobenzene                             |                    | ND             |           | 330  |
| 5-Nitro-o-toluidine                      |                    | ND             |           | 650  |
| 2-Nitrophenol                            |                    | ND             |           | 330  |
| 4-Nitrophenol                            |                    | ND             |           | 1600 |
| N-Nitrosodiethylamine                    |                    | ND             |           | 330  |
| N-Nitrosodimethylamine                   |                    | ND             |           | 330  |
| N-Nitrosodi-n-butylamine                 |                    | ND             |           | 330  |
| N-Nitrosodi-n-propylamine                |                    | ND             |           | 330  |
| n-Nitrosodiphenylamine(as diphenylamine) |                    | ND             |           | 330  |
| N-Nitrosomethylethylamine                |                    | ND             |           | 330  |
| N-Nitrosomorpholine                      |                    | ND             |           | 330  |
| N-Nitrosopiperidine                      |                    | ND             |           | 330  |
| N-Nitrosopyrrolidine                     |                    | ND             |           | 330  |
| Pentachlorobenzene                       |                    | ND             |           | 330  |
| Pentachloroethane                        |                    | ND             |           | 1600 |
| Pentachloronitrobenzene                  |                    | ND             |           | 1600 |
| Pentachlorophenol                        |                    | ND             |           | 1600 |
| Phenacetin                               |                    | ND             |           | 650  |
| Phenanthrene                             |                    | ND             |           | 330  |
| Phenol                                   |                    | ND             |           | 330  |
| Phorate                                  |                    | ND             |           | 1600 |
| Phthalic acid                            |                    | ND             |           | 5200 |
| Phthalic anhydride                       |                    | ND             |           | 5200 |
| Pronamide                                |                    | ND             |           | 650  |
| Pyrene                                   |                    | ND             |           | 330  |
| Pyridine                                 |                    | ND             |           | 650  |
| Safrole                                  |                    | ND             |           | 1600 |
| 1,2,4,5-Tetrachlorobenzene               |                    | ND             |           | 330  |

**Analytical Data**

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

**8270C Semivolatile Organic Compounds (GC/MS)**

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: | 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31384 | Lab File ID:           | K6698.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 30.3 g  |
| Date Analyzed: | 09/23/2010 2327 |                 |           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                 |           | Injection Volume:      | 0.5 uL  |

| Analyte                          | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|----------------------------------|--------------------|----------------|-----------|------|
| 2,3,4,6-Tetrachlorophenol        |                    | ND             |           | 1600 |
| 2,4,6 - Tribromophenol           |                    | ND             |           | 330  |
| 1,2,4-Trichlorobenzene           |                    | ND             |           | 330  |
| 2,4,5-Trichlorophenol            |                    | ND             |           | 330  |
| 2,4,6-Trichlorophenol            |                    | ND             |           | 330  |
| Triethyl amine                   |                    | ND             |           | 2700 |
| Tris(2,3-dibromopropyl)phosphate |                    | ND             |           | 830  |
| 2-sec-Butyl-4,6-dinitrophenol    |                    | ND             |           | 650  |

| Surrogate        | %Rec | Qualifier | Acceptance Limits |
|------------------|------|-----------|-------------------|
| 2-Fluorobiphenyl | 55   |           | 30 - 120          |
| 2-Fluorophenol   | 55   |           | 10 - 133          |
| Nitrobenzene-d5  | 55   |           | 10 - 137          |
| Phenol-d5        | 59   |           | 10 - 124          |
| Terphenyl-d14    | 46   |           | 10 - 129          |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8270C Semivolatile Organic Compounds (GC/MS)

|                |                 |                           |                        |         |
|----------------|-----------------|---------------------------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch: 280-31384     | Lab File ID:           | K6702.D |
| Dilution:      | 1.0             |                           | Initial Weight/Volume: | 30.2 g  |
| Date Analyzed: | 09/24/2010 0048 |                           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                           | Injection Volume:      | 0.5 uL  |

| Analyte                       | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|-------------------------------|--------------------|----------------|-----------|------|
| Acenaphthene                  |                    | ND             |           | 330  |
| Acenaphthylene                |                    | ND             |           | 330  |
| Acetophenone                  |                    | ND             |           | 330  |
| 2-Acetylaminofluorene         |                    | ND             |           | 3300 |
| Acrylamide                    |                    | ND             |           | 1600 |
| Aniline                       |                    | ND             |           | 330  |
| Anthracene                    |                    | ND             |           | 330  |
| Benzal chloride               |                    | ND             |           | 2700 |
| Benzo[a]anthracene            |                    | ND             |           | 330  |
| Benzo[a]pyrene                |                    | ND             |           | 330  |
| Benzo[b]fluoranthene          |                    | ND             |           | 330  |
| Benzo[g,h,i]perylene          |                    | ND             |           | 330  |
| Benzo[k]fluoranthene          |                    | ND             |           | 330  |
| Bis(2-chloroethoxy)methane    |                    | ND             |           | 330  |
| Bis(2-chloroethyl)ether       |                    | ND             |           | 330  |
| bis (2-chloroisopropyl) ether |                    | ND             |           | 330  |
| Bis(2-ethylhexyl) phthalate   |                    | ND             |           | 330  |
| 4-Bromophenyl phenyl ether    |                    | ND             |           | 330  |
| Butyl benzyl phthalate        |                    | ND             |           | 330  |
| Carbofuran phenol             |                    | ND             |           | 2700 |
| 4-Chloroaniline               |                    | ND             |           | 330  |
| 4-Chloro-3-methylphenol       |                    | ND             |           | 330  |
| 2-Chloronaphthalene           |                    | ND             |           | 330  |
| 2-Chlorophenol                |                    | ND             |           | 330  |
| Chrysene                      |                    | ND             |           | 330  |
| Dibenz(a,h)anthracene         |                    | ND             |           | 330  |
| 1,2-Dichlorobenzene           |                    | ND             |           | 330  |
| 1,3-Dichlorobenzene           |                    | ND             |           | 330  |
| 1,4-Dichlorobenzene           |                    | ND             |           | 330  |
| 2,4-Dichlorophenol            |                    | ND             |           | 330  |
| 2,6-Dichlorophenol            |                    | ND             |           | 330  |
| Diethyl phthalate             |                    | ND             |           | 660  |
| 2,4-Dimethylphenol            |                    | ND             |           | 330  |
| Dimethyl phthalate            |                    | ND             |           | 330  |
| Di-n-butyl phthalate          |                    | ND             |           | 330  |
| 1,4-Dinitrobenzene            |                    | ND             |           | 330  |
| 4,6-Dinitro-2-methylphenol    |                    | ND             |           | 1600 |
| 2,4-Dinitrophenol             |                    | ND             |           | 1600 |
| 2,4-Dinitrotoluene            |                    | ND             |           | 330  |
| 2,6-Dinitrotoluene            |                    | ND             |           | 330  |
| Di-n-octyl phthalate          |                    | ND             |           | 330  |
| Diphenylamine                 |                    | ND             |           | 330  |
| Disulfoton                    |                    | ND             |           | 1600 |
| Parathion                     |                    | ND             |           | 1600 |
| Famphur                       |                    | ND             |           | 660  |
| Fluoranthene                  |                    | ND             |           | 330  |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8270C Semivolatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: | 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31384 | Lab File ID:           | K6702.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 30.2 g  |
| Date Analyzed: | 09/24/2010 0048 |                 |           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                 |           | Injection Volume:      | 0.5 uL  |

| Analyte                                  | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|--|--------------------|----------------|-----------|------|
| Fluorene                                 |                    | ND             |           | 330  |
| Hexachlorobenzene                        |                    | ND             |           | 330  |
| Hexachlorobutadiene                      |                    | ND             |           | 330  |
| Hexachlorocyclopentadiene                |                    | ND             |           | 1600 |
| Hexachloroethane                         |                    | ND             |           | 330  |
| Hexachloropropene                        |                    | ND             |           | 3300 |
| Indeno[1,2,3-cd]pyrene                   |                    | ND             |           | 330  |
| Isosafrole                               |                    | ND             |           | 660  |
| Methapyrilene                            |                    | ND             |           | 1600 |
| 3-Methylcholanthrene                     |                    | ND             |           | 660  |
| 4,4'-Methylene bis(2-chloroaniline)      |                    | ND             |           | 330  |
| Methyl parathion                         |                    | ND             |           | 1600 |
| 2-Methylphenol                           |                    | ND             |           | 330  |
| 3 & 4 Methylphenol                       |                    | ND             |           | 330  |
| Naphthalene                              |                    | ND             |           | 330  |
| 2-Nitroaniline                           |                    | ND             |           | 1600 |
| 3-Nitroaniline                           |                    | ND             |           | 1600 |
| 4-Nitroaniline                           |                    | ND             |           | 1600 |
| Nitrobenzene                             |                    | ND             |           | 330  |
| 5-Nitro-o-toluidine                      |                    | ND             |           | 660  |
| 2-Nitrophenol                            |                    | ND             |           | 330  |
| 4-Nitrophenol                            |                    | ND             |           | 1600 |
| N-Nitrosodiethylamine                    |                    | ND             |           | 330  |
| N-Nitrosodimethylamine                   |                    | ND             |           | 330  |
| N-Nitrosodi-n-butylamine                 |                    | ND             |           | 330  |
| N-Nitrosodi-n-propylamine                |                    | ND             |           | 330  |
| n-Nitrosodiphenylamine(as diphenylamine) |                    | ND             |           | 330  |
| N-Nitrosomethylethylamine                |                    | ND             |           | 330  |
| N-Nitrosomorpholine                      |                    | ND             |           | 330  |
| N-Nitrosopiperidine                      |                    | ND             |           | 330  |
| N-Nitrosopyrrolidine                     |                    | ND             |           | 330  |
| Pentachlorobenzene                       |                    | ND             |           | 330  |
| Pentachloroethane                        |                    | ND             |           | 1600 |
| Pentachloronitrobenzene                  |                    | ND             |           | 1600 |
| Pentachlorophenol                        |                    | ND             |           | 1600 |
| Phenacetin                               |                    | ND             |           | 660  |
| Phenanthrene                             |                    | ND             |           | 330  |
| Phenol                                   |                    | ND             |           | 330  |
| Phorate                                  |                    | ND             |           | 1600 |
| Phthalic acid                            |                    | ND             |           | 5300 |
| Phthalic anhydride                       |                    | ND             |           | 5300 |
| Pronamide                                |                    | ND             |           | 660  |
| Pyrene                                   |                    | ND             |           | 330  |
| Pyridine                                 |                    | ND             |           | 660  |
| Safrole                                  |                    | ND             |           | 1600 |
| 1,2,4,5-Tetrachlorobenzene               |                    | ND             |           | 330  |



# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8270C Semivolatile Organic Compounds (GC/MS)

|                |                 |                 |           |                        |         |
|----------------|-----------------|-----------------|-----------|------------------------|---------|
| Method:        | 8270C           | Analysis Batch: | 280-32859 | Instrument ID:         | MSS_K   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31384 | Lab File ID:           | K6702.D |
| Dilution:      | 1.0             |                 |           | Initial Weight/Volume: | 30.2 g  |
| Date Analyzed: | 09/24/2010 0048 |                 |           | Final Weight/Volume:   | 1000 uL |
| Date Prepared: | 09/14/2010 2200 |                 |           | Injection Volume:      | 0.5 uL  |

| Analyte                          | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL   |
|----------------------------------|--------------------|----------------|-----------|------|
| 2,3,4,6-Tetrachlorophenol        |                    | ND             |           | 1600 |
| 2,4,6 - Tribromophenol           |                    | ND             |           | 330  |
| 1,2,4-Trichlorobenzene           |                    | ND             |           | 330  |
| 2,4,5-Trichlorophenol            |                    | ND             |           | 330  |
| 2,4,6-Trichlorophenol            |                    | ND             |           | 330  |
| Triethyl amine                   |                    | ND             |           | 2700 |
| Tris(2,3-dibromopropyl)phosphate |                    | ND             |           | 830  |
| 2-sec-Butyl-4,6-dinitrophenol    |                    | ND             |           | 660  |

| Surrogate        | %Rec | Qualifier | Acceptance Limits |
|------------------|------|-----------|-------------------|
| 2-Fluorobiphenyl | 41   |           | 30 - 120          |
| 2-Fluorophenol   | 44   |           | 10 - 133          |
| Nitrobenzene-d5  | 41   |           | 10 - 137          |
| Phenol-d5        | 53   |           | 10 - 124          |
| Terphenyl-d14    | 2    | X         | 10 - 129          |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8015B Nonhalogenated Organic Compounds - Direct Injection (GC)-Soluble

|                |                 |                           |                        |         |
|----------------|-----------------|---------------------------|------------------------|---------|
| Method:        | 8015B           | Analysis Batch: 280-31594 | Instrument ID:         | GCS_A   |
| Preparation:   | N/A             |                           | Initial Weight/Volume: |         |
| Dilution:      | 1.0             | Leachate Batch: 280-31516 | Final Weight/Volume:   | 1.0 mL  |
| Date Analyzed: | 09/15/2010 1446 |                           | Injection Volume:      | 1 uL    |
| Date Prepared: |                 |                           | Result Type:           | PRIMARY |
| Date Leached:  | 09/15/2010 1134 |                           |                        |         |

|          |                    |               |           |     |
|----------|--------------------|---------------|-----------|-----|
| Analyte  | DryWt Corrected: N | Result (mg/L) | Qualifier | RL  |
| Methanol |                    | ND            |           | 1.0 |

|           |      |           |                   |
|-----------|------|-----------|-------------------|
| Surrogate | %Rec | Qualifier | Acceptance Limits |
| Propanol  | 99   |           | 50 - 150          |

**Analytical Data**

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

**8015B Nonhalogenated Organic Compounds - Direct Injection (GC)-Soluble**

|                |                 |                           |                        |         |
|----------------|-----------------|---------------------------|------------------------|---------|
| Method:        | 8015B           | Analysis Batch: 280-31594 | Instrument ID:         | GCS_A   |
| Preparation:   | N/A             |                           | Initial Weight/Volume: |         |
| Dilution:      | 1.0             | Leachate Batch: 280-31516 | Final Weight/Volume:   | 1.0 mL  |
| Date Analyzed: | 09/15/2010 1532 |                           | Injection Volume:      | 1 uL    |
| Date Prepared: |                 |                           | Result Type:           | PRIMARY |
| Date Leached:  | 09/15/2010 1134 |                           |                        |         |

|          |                    |               |           |     |
|----------|--------------------|---------------|-----------|-----|
| Analyte  | DryWt Corrected: N | Result (mg/L) | Qualifier | RL  |
| Methanol |                    | ND            |           | 1.0 |

|           |      |           |                   |
|-----------|------|-----------|-------------------|
| Surrogate | %Rec | Qualifier | Acceptance Limits |
| Propanol  | 80   |           | 50 - 150          |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8081A Organochlorine Pesticides (GC)

|                |                 |                 |           |                        |          |
|----------------|-----------------|-----------------|-----------|------------------------|----------|
| Method:        | 8081A           | Analysis Batch: | 280-31865 | Instrument ID:         | GCS_P2   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31388 | Initial Weight/Volume: | 30.5 g   |
| Dilution:      | 1.0             |                 |           | Final Weight/Volume:   | 10000 uL |
| Date Analyzed: | 09/16/2010 1634 |                 |           | Injection Volume:      |          |
| Date Prepared: | 09/14/2010 2200 |                 |           | Result Type:           | PRIMARY  |

| Analyte             | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL  |
|---------------------|--------------------|----------------|-----------|-----|
| 2,4'-DDD            |                    | ND             |           | 1.7 |
| 2,4'-DDE            |                    | ND             |           | 1.7 |
| 2,4'-DDT            |                    | ND             |           | 1.7 |
| 4,4'-DDD            |                    | ND             |           | 1.7 |
| 4,4'-DDE            |                    | ND             |           | 1.7 |
| 4,4'-DDT            |                    | ND             |           | 1.7 |
| Aldrin              |                    | ND             |           | 1.7 |
| alpha-BHC           |                    | ND             |           | 1.7 |
| alpha-Chlordane     |                    | ND             |           | 1.7 |
| beta-BHC            |                    | ND             |           | 1.7 |
| Chlordane (n.o.s.)  |                    | ND             |           | 1.7 |
| delta-BHC           |                    | ND             |           | 1.7 |
| Dieldrin            |                    | ND             |           | 1.7 |
| Endosulfan I        |                    | ND             |           | 1.7 |
| Endosulfan II       |                    | ND             |           | 1.7 |
| Endosulfan sulfate  |                    | 1.7            | p         | 1.7 |
| Endrin              |                    | ND             |           | 1.7 |
| Endrin aldehyde     |                    | ND             |           | 1.7 |
| Endrin ketone       |                    | ND             |           | 1.7 |
| gamma-BHC (Lindane) |                    | ND             |           | 1.7 |
| gamma-Chlordane     |                    | ND             |           | 1.7 |
| Heptachlor          |                    | ND             |           | 1.7 |
| Heptachlor epoxide  |                    | ND             |           | 1.7 |
| Kepone              |                    | ND             |           | 74  |
| Methoxychlor        |                    | ND             |           | 3.2 |
| Toxaphene           |                    | ND             |           | 66  |
| Isodrin             |                    | ND             |           | 1.7 |

| Surrogate              | %Rec | Qualifier | Acceptance Limits |
|------------------------|------|-----------|-------------------|
| DCB Decachlorobiphenyl | 99   |           | 63 - 124          |
| Tetrachloro-m-xylene   | 60   |           | 59 - 115          |

# Analytical Data

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

## 8081A Organochlorine Pesticides (GC)

|                |                 |                 |           |                        |          |
|----------------|-----------------|-----------------|-----------|------------------------|----------|
| Method:        | 8081A           | Analysis Batch: | 280-31865 | Instrument ID:         | GCS_P2   |
| Preparation:   | 3550C           | Prep Batch:     | 280-31388 | Initial Weight/Volume: | 30.2 g   |
| Dilution:      | 1.0             |                 |           | Final Weight/Volume:   | 10000 uL |
| Date Analyzed: | 09/16/2010 1723 |                 |           | Injection Volume:      |          |
| Date Prepared: | 09/14/2010 2200 |                 |           | Result Type:           | PRIMARY  |

| Analyte             | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL  |
|---------------------|--------------------|----------------|-----------|-----|
| 2,4'-DDD            |                    | ND             |           | 1.7 |
| 2,4'-DDE            |                    | ND             |           | 1.7 |
| 2,4'-DDT            |                    | ND             |           | 1.7 |
| 4,4'-DDD            |                    | ND             |           | 1.7 |
| 4,4'-DDE            |                    | ND             |           | 1.7 |
| 4,4'-DDT            |                    | ND             |           | 1.7 |
| Aldrin              |                    | ND             |           | 1.7 |
| alpha-BHC           |                    | ND             |           | 1.7 |
| alpha-Chlordane     |                    | ND             |           | 1.7 |
| beta-BHC            |                    | ND             |           | 1.7 |
| Chlordane (n.o.s.)  |                    | ND             |           | 1.7 |
| delta-BHC           |                    | ND             |           | 1.7 |
| Dieldrin            |                    | ND             |           | 1.7 |
| Endosulfan I        |                    | ND             |           | 1.7 |
| Endosulfan II       |                    | ND             |           | 1.7 |
| Endosulfan sulfate  |                    | ND             |           | 1.7 |
| Endrin              |                    | ND             |           | 1.7 |
| Endrin aldehyde     |                    | ND             |           | 1.7 |
| Endrin ketone       |                    | ND             |           | 1.7 |
| gamma-BHC (Lindane) |                    | ND             |           | 1.7 |
| gamma-Chlordane     |                    | ND             |           | 1.7 |
| Heptachlor          |                    | ND             |           | 1.7 |
| Heptachlor epoxide  |                    | ND             |           | 1.7 |
| Kepone              |                    | ND             |           | 75  |
| Methoxychlor        |                    | ND             |           | 3.3 |
| Toxaphene           |                    | ND             |           | 67  |
| Isodrin             |                    | ND             |           | 1.7 |

| Surrogate              | %Rec | Qualifier | Acceptance Limits |
|------------------------|------|-----------|-------------------|
| DCB Decachlorobiphenyl | 101  |           | 63 - 124          |
| Tetrachloro-m-xylene   | 27   | X         | 59 - 115          |



**Analytical Data**

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: SL100906-1009012

Lab Sample ID: 280-7326-1

Date Sampled: 09/13/2010 1030

Client Matrix: Solid

Date Received: 09/14/2010 0930

**8151A Herbicides (GC)**

|                |                 |                 |           |                        |          |
|----------------|-----------------|-----------------|-----------|------------------------|----------|
| Method:        | 8151A           | Analysis Batch: | 280-32677 | Instrument ID:         | GCS_M    |
| Preparation:   | 8151A           | Prep Batch:     | 280-31795 | Initial Weight/Volume: | 51.1 g   |
| Dilution:      | 1.0             |                 |           | Final Weight/Volume:   | 10000 uL |
| Date Analyzed: | 09/22/2010 1610 |                 |           | Injection Volume:      | 1 uL     |
| Date Prepared: | 09/16/2010 2030 |                 |           | Result Type:           | PRIMARY  |

| Analyte           | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL |
|-------------------|--------------------|----------------|-----------|----|
| 2,4,5-T           |                    | ND             |           | 20 |
| 2,4-D             |                    | ND             |           | 78 |
| Silvex (2,4,5-TP) |                    | ND             |           | 20 |

| Surrogate                     | %Rec | Qualifier | Acceptance Limits |
|-------------------------------|------|-----------|-------------------|
| 2,4-Dichlorophenylacetic acid | 82   |           | 31 - 105          |

**Analytical Data**

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Client Sample ID: RD100906-1009012

Lab Sample ID: 280-7326-2

Date Sampled: 09/13/2010 1045

Client Matrix: Solid

Date Received: 09/14/2010 0930

**8151A Herbicides (GC)**

|                |                 |                           |                        |          |
|----------------|-----------------|---------------------------|------------------------|----------|
| Method:        | 8151A           | Analysis Batch: 280-32677 | Instrument ID:         | GCS_M    |
| Preparation:   | 8151A           | Prep Batch: 280-31795     | Initial Weight/Volume: | 50.3 g   |
| Dilution:      | 1.0             |                           | Final Weight/Volume:   | 10000 uL |
| Date Analyzed: | 09/22/2010 1632 |                           | Injection Volume:      | 1 uL     |
| Date Prepared: | 09/16/2010 2030 |                           | Result Type:           | PRIMARY  |

| Analyte           | DryWt Corrected: N | Result (ug/Kg) | Qualifier | RL |
|-------------------|--------------------|----------------|-----------|----|
| 2,4,5-T           |                    | ND             |           | 20 |
| 2,4-D             |                    | ND             |           | 80 |
| Silvex (2,4,5-TP) |                    | ND             |           | 20 |

| Surrogate                     | %Rec | Qualifier | Acceptance Limits |
|-------------------------------|------|-----------|-------------------|
| 2,4-Dichlorophenylacetic acid | 76   |           | 31 - 105          |

## DATA REPORTING QUALIFIERS

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

| Lab Section    | Qualifier | Description   |
|----------------|-----------|---|
| GC/MS VOA      | *         | LCS or LCSD exceeds the control limits  |
|                | F         | MS or MSD exceeds the control limits  |
|                | *         | RPD of the LCS and LCSD exceeds the control limits  |
|                | X         | Surrogate is outside control limits   |
| GC/MS Semi VOA | X         | Surrogate is outside control limits   |
|                |           |   |
| GC Semi VOA    | F         | MS or MSD exceeds the control limits  |
|                | X         | Surrogate is outside control limits   |
|                | p         | The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported. |

# QUALITY CONTROL RESULTS

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### QC Association Summary

| Lab Sample ID                   | Client Sample ID             | Report Basis | Client Matrix | Method | Prep Batch |
|---------------------------------|------------------------------|--------------|---------------|--------|------------|
| <b>GC/MS VOA</b>                |                              |              |               |        |            |
| <b>Prep Batch: 280-31337</b>    |                              |              |               |        |            |
| LCS 280-31337/2-A               | Lab Control Sample           | T            | Solid         | 5030B  |            |
| MB 280-31337/1-A                | Method Blank                 | T            | Solid         | 5030B  |            |
| LCSD 280-31337/3-A              | Lab Control Sample Duplicate | T            | Solid         | 5030B  |            |
| 280-7326-1MSD                   | Matrix Spike Duplicate       | T            | Solid         | 5030B  |            |
| 280-7326-1                      | SL100906-1009012             | T            | Solid         | 5030B  |            |
| 280-7326-1MS                    | Matrix Spike                 | T            | Solid         | 5030B  |            |
| 280-7326-2                      | RD100906-1009012             | T            | Solid         | 5030B  |            |
| <b>Analysis Batch:280-31597</b> |                              |              |               |        |            |
| LCSD 280-31337/3-A              | Lab Control Sample Duplicate | T            | Solid         | 8260B  | 280-31337  |
| MB 280-31337/1-A                | Method Blank                 | T            | Solid         | 8260B  | 280-31337  |
| LCS 280-31337/2-A               | Lab Control Sample           | T            | Solid         | 8260B  | 280-31337  |
| 280-7326-1                      | SL100906-1009012             | T            | Solid         | 8260B  | 280-31337  |
| 280-7326-1MSD                   | Matrix Spike Duplicate       | T            | Solid         | 8260B  | 280-31337  |
| 280-7326-1MS                    | Matrix Spike                 | T            | Solid         | 8260B  | 280-31337  |
| 280-7326-2                      | RD100906-1009012             | T            | Solid         | 8260B  | 280-31337  |
| <b>Report Basis</b>             |                              |              |               |        |            |
| T = Total                       |                              |              |               |        |            |
| <b>GC/MS Semi VOA</b>           |                              |              |               |        |            |
| <b>Prep Batch: 280-31384</b>    |                              |              |               |        |            |
| LCSD 280-31384/3-A              | Lab Control Sample Duplicate | T            | Solid         | 3550C  |            |
| LCS 280-31384/2-A               | Lab Control Sample           | T            | Solid         | 3550C  |            |
| MB 280-31384/1-A                | Method Blank                 | T            | Solid         | 3550C  |            |
| 280-7326-1                      | SL100906-1009012             | T            | Solid         | 3550C  |            |
| 280-7326-1MS                    | Matrix Spike                 | T            | Solid         | 3550C  |            |
| 280-7326-1MSD                   | Matrix Spike Duplicate       | T            | Solid         | 3550C  |            |
| 280-7326-2                      | RD100906-1009012             | T            | Solid         | 3550C  |            |
| <b>Analysis Batch:280-32859</b> |                              |              |               |        |            |
| LCSD 280-31384/3-A              | Lab Control Sample Duplicate | T            | Solid         | 8270C  | 280-31384  |
| MB 280-31384/1-A                | Method Blank                 | T            | Solid         | 8270C  | 280-31384  |
| LCS 280-31384/2-A               | Lab Control Sample           | T            | Solid         | 8270C  | 280-31384  |
| 280-7326-1MS                    | Matrix Spike                 | T            | Solid         | 8270C  | 280-31384  |
| 280-7326-1MSD                   | Matrix Spike Duplicate       | T            | Solid         | 8270C  | 280-31384  |
| 280-7326-1                      | SL100906-1009012             | T            | Solid         | 8270C  | 280-31384  |
| 280-7326-2                      | RD100906-1009012             | T            | Solid         | 8270C  | 280-31384  |
| <b>Report Basis</b>             |                              |              |               |        |            |
| T = Total                       |                              |              |               |        |            |

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## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### QC Association Summary

| Lab Sample ID                    | Client Sample ID             | Report Basis | Client Matrix | Method   | Prep Batch |
|----------------------------------|------------------------------|--------------|---------------|----------|------------|
| <b>GC VOA</b>                    |                              |              |               |          |            |
| <b>Prep Batch: 280-31516</b>     |                              |              |               |          |            |
| LCSD 280-31516/2-A               | Lab Control Sample Duplicate | S            | Solid         | DI Leach |            |
| LCS 280-31516/1-A                | Lab Control Sample           | S            | Solid         | DI Leach |            |
| MB 280-31516/3-A                 | Method Blank                 | S            | Solid         | DI Leach |            |
| 280-7326-1                       | SL100906-1009012             | S            | Solid         | DI Leach |            |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | S            | Solid         | DI Leach |            |
| 280-7326-1MS                     | Matrix Spike                 | S            | Solid         | DI Leach |            |
| 280-7326-2                       | RD100906-1009012             | S            | Solid         | DI Leach |            |
| <b>Analysis Batch: 280-31594</b> |                              |              |               |          |            |
| MB 280-31516/3-A                 | Method Blank                 | S            | Solid         | 8015B    |            |
| LCS 280-31516/1-A                | Lab Control Sample           | S            | Solid         | 8015B    |            |
| LCSD 280-31516/2-A               | Lab Control Sample Duplicate | S            | Solid         | 8015B    |            |
| 280-7326-1                       | SL100906-1009012             | S            | Solid         | 8015B    |            |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | S            | Solid         | 8015B    |            |
| 280-7326-1MS                     | Matrix Spike                 | S            | Solid         | 8015B    |            |
| 280-7326-2                       | RD100906-1009012             | S            | Solid         | 8015B    |            |

#### Report Basis

S = Soluble

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### QC Association Summary

| Lab Sample ID                    | Client Sample ID             | Report Basis | Client Matrix | Method | Prep Batch |
|----------------------------------|------------------------------|--------------|---------------|--------|------------|
| <b>GC Semi VOA</b>               |                              |              |               |        |            |
| <b>Prep Batch: 280-31388</b>     |                              |              |               |        |            |
| LCS 280-31388/2-A                | Lab Control Sample           | T            | Solid         | 3550C  |            |
| LCSD 280-31388/3-A               | Lab Control Sample Duplicate | T            | Solid         | 3550C  |            |
| MB 280-31388/1-A                 | Method Blank                 | T            | Solid         | 3550C  |            |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | T            | Solid         | 3550C  |            |
| 280-7326-1                       | SL100906-1009012             | T            | Solid         | 3550C  |            |
| 280-7326-1MS                     | Matrix Spike                 | T            | Solid         | 3550C  |            |
| 280-7326-2                       | RD100906-1009012             | T            | Solid         | 3550C  |            |
| <b>Prep Batch: 280-31795</b>     |                              |              |               |        |            |
| MB 280-31795/1-A                 | Method Blank                 | T            | Solid         | 8151A  |            |
| LCS 280-31795/2-A                | Lab Control Sample           | T            | Solid         | 8151A  |            |
| LCSD 280-31795/3-A               | Lab Control Sample Duplicate | T            | Solid         | 8151A  |            |
| 280-7326-1MS                     | Matrix Spike                 | T            | Solid         | 8151A  |            |
| 280-7326-1                       | SL100906-1009012             | T            | Solid         | 8151A  |            |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | T            | Solid         | 8151A  |            |
| 280-7326-2                       | RD100906-1009012             | T            | Solid         | 8151A  |            |
| <b>Analysis Batch: 280-31865</b> |                              |              |               |        |            |
| MB 280-31388/1-A                 | Method Blank                 | T            | Solid         | 8081A  | 280-31388  |
| LCS 280-31388/2-A                | Lab Control Sample           | T            | Solid         | 8081A  | 280-31388  |
| LCSD 280-31388/3-A               | Lab Control Sample Duplicate | T            | Solid         | 8081A  | 280-31388  |
| 280-7326-1MS                     | Matrix Spike                 | T            | Solid         | 8081A  | 280-31388  |
| 280-7326-1                       | SL100906-1009012             | T            | Solid         | 8081A  | 280-31388  |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | T            | Solid         | 8081A  | 280-31388  |
| 280-7326-2                       | RD100906-1009012             | T            | Solid         | 8081A  | 280-31388  |
| <b>Analysis Batch: 280-32677</b> |                              |              |               |        |            |
| LCSD 280-31795/3-A               | Lab Control Sample Duplicate | T            | Solid         | 8151A  | 280-31795  |
| LCS 280-31795/2-A                | Lab Control Sample           | T            | Solid         | 8151A  | 280-31795  |
| MB 280-31795/1-A                 | Method Blank                 | T            | Solid         | 8151A  | 280-31795  |
| 280-7326-1                       | SL100906-1009012             | T            | Solid         | 8151A  | 280-31795  |
| 280-7326-1MS                     | Matrix Spike                 | T            | Solid         | 8151A  | 280-31795  |
| 280-7326-1MSD                    | Matrix Spike Duplicate       | T            | Solid         | 8151A  | 280-31795  |
| 280-7326-2                       | RD100906-1009012             | T            | Solid         | 8151A  | 280-31795  |

#### Report Basis

T = Total

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## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Surrogate Recovery Report

#### 8260B Volatile Organic Compounds (GC/MS)

##### Client Matrix: Solid

| Lab Sample ID      | Client Sample ID        | DCA<br>%Rec | DBFM<br>%Rec | TOL<br>%Rec | BFB<br>%Rec |
|--------------------|-------------------------|-------------|--------------|-------------|-------------|
| 280-7326-1         | SL100906-1009012        | 71          | 72           | 49X         | 38X         |
| 280-7326-2         | RD100906-1009012        | 87          | 90           | 33X         | 12X         |
| MB 280-31337/1-A   |                         | 86          | 87           | 91          | 100         |
| LCS 280-31337/2-A  |                         | 76          | 81           | 83          | 85          |
| LCSD 280-31337/3-A |                         | 69          | 73           | 73          | 74          |
| 280-7326-1 MS      | SL100906-1009012<br>MS  | 75          | 77           | 56X         | 46X         |
| 280-7326-1 MSD     | SL100906-1009012<br>MSD | 73          | 75           | 57X         | 46X         |

| Surrogate                          | Acceptance Limits |
|------------------------------------|-------------------|
| DCA = 1,2-Dichloroethane-d4 (Surr) | 50-139            |
| DBFM = Dibromofluoromethane (Surr) | 60-133            |
| TOL = Toluene-d8 (Surr)            | 68-143            |
| BFB = 4-Bromofluorobenzene (Surr)  | 62-133            |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Surrogate Recovery Report

#### 8270C Semivolatile Organic Compounds (GC/MS)

##### Client Matrix: Solid

| Lab Sample ID      | Client Sample ID        | FBP<br>%Rec | 2FP<br>%Rec | NBZ<br>%Rec | PHL<br>%Rec | TPH<br>%Rec |
|--------------------|-------------------------|-------------|-------------|-------------|-------------|-------------|
| 280-7326-1         | SL100906-1009012        | 55          | 55          | 55          | 59          | 46          |
| 280-7326-2         | RD100906-1009012        | 41          | 44          | 41          | 53          | 2X          |
| MB 280-31384/1-A   |                         | 71          | 72          | 69          | 73          | 81          |
| LCS 280-31384/2-A  |                         | 78          | 76          | 74          | 79          | 86          |
| LCSD 280-31384/3-A |                         | 79          | 79          | 76          | 80          | 88          |
| 280-7326-1 MS      | SL100906-1009012<br>MS  | 57          | 57          | 54          | 61          | 48          |
| 280-7326-1 MSD     | SL100906-1009012<br>MSD | 53          | 53          | 51          | 55          | 46          |

| Surrogate              | Acceptance Limits |
|------------------------|-------------------|
| FBP = 2-Fluorobiphenyl | 30-120            |
| 2FP = 2-Fluorophenol   | 10-133            |
| NBZ = Nitrobenzene-d5  | 10-137            |
| PHL = Phenol-d5        | 10-124            |
| TPH = Terphenyl-d14    | 10-129            |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Surrogate Recovery Report

#### 8015B Nonhalogenated Organic Compounds - Direct Injection (GC)

##### Client Matrix: Solid Soluble

| Lab Sample ID      | Client Sample ID        | PPN1<br>%Rec |
|--------------------|-------------------------|--------------|
| 280-7326-1         | SL100906-1009012        | 99           |
| 280-7326-2         | RD100906-1009012        | 80           |
| MB 280-31516/3-A   |                         | 101          |
| LCS 280-31516/1-A  |                         | 104          |
| LCSD 280-31516/2-A |                         | 104          |
| 280-7326-1 MS      | SL100906-1009012<br>MS  | 97           |
| 280-7326-1 MSD     | SL100906-1009012<br>MSD | 96           |

|                |                   |
|----------------|-------------------|
| Surrogate      | Acceptance Limits |
| PPN = Propanol | 50-150            |



## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Surrogate Recovery Report

#### 8081A Organochlorine Pesticides (GC)

##### Client Matrix: Solid

| Lab Sample ID      | Client Sample ID        | DCB1<br>%Rec | TCX1<br>%Rec |
|--------------------|-------------------------|--------------|--------------|
| 280-7326-1         | SL100906-1009012        | 99           | 60           |
| 280-7326-2         | RD100906-1009012        | 101          | 27X          |
| MB 280-31388/1-A   |                         | 103          | 86           |
| LCS 280-31388/2-A  |                         | 102          | 88           |
| LCSD 280-31388/3-A |                         | 100          | 88           |
| 280-7326-1 MS      | SL100906-1009012<br>MS  | 100          | 60           |
| 280-7326-1 MSD     | SL100906-1009012<br>MSD | 104          | 64           |

| Surrogate                    | Acceptance Limits |
|------------------------------|-------------------|
| DCB = DCB Decachlorobiphenyl | 63-124            |
| TCX = Tetrachloro-m-xylene   | 59-115            |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Surrogate Recovery Report

#### 8151A Herbicides (GC)

##### Client Matrix: Solid

| Lab Sample ID      | Client Sample ID        | DCPA1<br>%Rec | DCPA2<br>%Rec |
|--------------------|-------------------------|---------------|---------------|
| 280-7326-1         | SL100906-1009012        |               | 82            |
| 280-7326-2         | RD100906-1009012        |               | 76            |
| MB 280-31795/1-A   |                         | 85            |               |
| LCS 280-31795/2-A  |                         | 95            |               |
| LCSD 280-31795/3-A |                         | 88            |               |
| 280-7326-1 MS      | SL100906-1009012<br>MS  | 102           |               |
| 280-7326-1 MSD     | SL100906-1009012<br>MSD |               | 72            |

Surrogate

Acceptance Limits

DCPA = 2,4-Dichlorophenylacetic acid

31-105

# Quality Control Results

Job Number: 280-7326-1

Client: Clean Harbors Environmental Services Inc

Method: 8260B  
Preparation: 5030B

Method Blank - Batch: 280-31337

Lab Sample ID: MB 280-31337/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1616  
Date Prepared: 09/14/2010 1419

Analysis Batch: 280-31597  
Prep Batch: 280-31337  
Units: ug/Kg

Instrument ID: MSV\_P  
Lab File ID: P1076.D  
Initial Weight/Volume: 5.022 g  
Final Weight/Volume: 1000 mL

| Analyte                     | Result | Qual | RL    |
|-----------------------------|--------|------|-------|
|                             | ND     |      | 250   |
| 1,1,1,2-Tetrachloroethane   | ND     |      | 250   |
| 1,1,1-Trichloroethane       | ND     |      | 250   |
| 1,1,2,2-Tetrachloroethane   | ND     |      | 250   |
| 1,1,2-Trichloroethane       | ND     |      | 250   |
| 1,1-Dichloroethane          | ND     |      | 250   |
| 1,1-Dichloroethene          | ND     |      | 500   |
| 1,2,3-Trichloropropane      | ND     |      | 250   |
| 1,2-Dibromo-3-Chloropropane | ND     |      | 250   |
| 1,2-Dibromoethane           | ND     |      | 250   |
| 1,2-Dichloroethane          | ND     |      | 25000 |
| 1,2-Dichloropropane         | ND     |      | 1000  |
| 1,4-Dioxane                 | ND     |      | 1000  |
| 2-Butanone (MEK)            | ND     |      | 1000  |
| 2-Hexanone                  | ND     |      | 1000  |
| 4-Methyl-2-pentanone (MIBK) | ND     |      | 5000  |
| Acetone                     | ND     |      | 10000 |
| Acetonitrile                | ND     |      | 5000  |
| n-Butanol                   | ND     |      | 5000  |
| Acrolein                    | ND     |      | 500   |
| Acrylonitrile               | ND     |      | 250   |
| Allyl chloride              | ND     |      | 250   |
| Benzene                     | ND     |      | 500   |
| Bromoform                   | ND     |      | 250   |
| Bromomethane                | ND     |      | 250   |
| Carbon disulfide            | ND     |      | 250   |
| Carbon tetrachloride        | ND     |      | 250   |
| Chlorobenzene               | ND     |      | 500   |
| Chlorodibromomethane        | ND     |      | 250   |
| Chloroethane                | ND     |      | 500   |
| Chloroform                  | ND     |      | 250   |
| Chloromethane               | ND     |      | 250   |
| 2-Chloro-1,3-butadiene      | ND     |      | 250   |
| cis-1,3-Dichloropropene     | ND     |      | 250   |
| Dibromomethane              | ND     |      | 500   |
| Dichlorobromomethane        | ND     |      | 250   |
| Dichlorodifluoromethane     | ND     |      | 250   |
| Ethyl methacrylate          | ND     |      | 250   |
| Ethylbenzene                | ND     |      | 10000 |
| Iodomethane                 | ND     |      | 2500  |
| Isobutyl alcohol            | ND     |      | 250   |
| Methacrylonitrile           | ND     |      | 250   |
| Methyl methacrylate         | ND     |      |       |
| Methylene Chloride          | ND     |      |       |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Method Blank - Batch: 280-31337

Method: 8260B

Preparation: 5030B

Lab Sample ID: MB 280-31337/1-A

Analysis Batch: 280-31597

Instrument ID: MSV\_P

Client Matrix: Solid

Prep Batch: 280-31337

Lab File ID: P1076.D

Dilution: 1.0

Units: ug/Kg

Initial Weight/Volume: 5.022 g

Date Analyzed: 09/15/2010 1616

Final Weight/Volume: 1000 mL

Date Prepared: 09/14/2010 1419

| Analyte                        | Result | Qual | RL   |
|--------------------------------|--------|------|------|
| m-Xylene & p-Xylene            | ND     |      | 250  |
| o-Xylene                       | ND     |      | 120  |
| Propionitrile                  | ND     |      | 1000 |
| Styrene                        | ND     |      | 250  |
| Tetrachloroethene              | ND     |      | 250  |
| Toluene                        | ND     |      | 250  |
| trans-1,2-Dichloroethene       | ND     |      | 120  |
| trans-1,3-Dichloropropene      | ND     |      | 250  |
| trans-1,4-Dichloro-2-butene    | ND     |      | 250  |
| Trichloroethene                | ND     |      | 250  |
| Trichlorofluoromethane         | ND     |      | 500  |
| Cyclohexanone                  | ND     |      | 4000 |
| Vinyl acetate                  | ND     |      | 500  |
| Vinyl chloride                 | ND     |      | 500  |
| Xylenes, Total                 | ND     |      | 250  |
| Ethyl acetate                  | ND     |      | 500  |
| Ethyl ether                    | ND     |      | 500  |
| 1,1,2-Trichlorotrifluoroethane | ND     |      | 1000 |

| Surrogate                    | % Rec | Acceptance Limits |
|------------------------------|-------|-------------------|
| 1,2-Dichloroethane-d4 (Surr) | 86    | 50 - 139          |
| Dibromofluoromethane (Surr)  | 87    | 60 - 133          |
| Toluene-d8 (Surr)            | 91    | 68 - 143          |
| 4-Bromofluorobenzene (Surr)  | 100   | 62 - 133          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Lab Control Sample/

Lab Control Sample Duplicate Recovery Report - Batch: 280-31337

Method: 8260B

Preparation: 5030B

LCS Lab Sample ID: LCS 280-31337/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1458  
Date Prepared: 09/14/2010 1419

Analysis Batch: 280-31597  
Prep Batch: 280-31337  
Units: ug/Kg

Instrument ID: MSV\_P  
Lab File ID: P1072.D  
Initial Weight/Volume: 5.017 g  
Final Weight/Volume: 1000 mL

LCSD Lab Sample ID: LCSD 280-31337/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1517  
Date Prepared: 09/14/2010 1419

Analysis Batch: 280-31597  
Prep Batch: 280-31337  
Units: ug/Kg

Instrument ID: MSV\_P  
Lab File ID: P1073.D  
Initial Weight/Volume: 5.043 g  
Final Weight/Volume: 1000 mL

| Analyte                      | % Rec.    |      | Limit      | RPD | RPD Limit         | LCS Qual | LCSD Qual |
|------------------------------|-----------|------|------------|-----|-------------------|----------|-----------|
|                              | LCS       | LCSD |            |     |                   |          |           |
| 1,1,1-Trichloroethane        | 106       | 116  | 65 - 129   | 9   | 20                |          |           |
| 1,1-Dichloroethane           | 100       | 104  | 66 - 121   | 4   | 25                |          |           |
| 1,1-Dichloroethene           | 106       | 113  | 62 - 125   | 6   | 29                |          |           |
| 1,2-Dibromoethane            | 87        | 90   | 68 - 125   | 3   | 36                |          |           |
| 1,2-Dichloropropane          | 99        | 104  | 66 - 119   | 5   | 22                |          |           |
| 1,3-Dichlorobenzene          | 113       | 115  | 74 - 119   | 1   | 20                |          |           |
| Benzene                      | 100       | 108  | 67 - 125   | 7   | 20                |          |           |
| Carbon tetrachloride         | 109       | 119  | 60 - 137   | 8   | 21                |          |           |
| Chlorobenzene                | 101       | 108  | 72 - 124   | 7   | 20                |          |           |
| Chloroform                   | 97        | 102  | 69 - 122   | 5   | 20                |          |           |
| Dichlorobromomethane         | 94        | 101  | 67 - 122   | 6   | 23                |          |           |
| Ethylbenzene                 | 109       | 118  | 73 - 127   | 8   | 20                |          |           |
| Methylene Chloride           | 103       | 103  | 49 - 126   | 1   | 22                |          |           |
| Tetrachloroethene            | 110       | 112  | 73 - 131   | 1   | 20                |          |           |
| Toluene                      | 105       | 111  | 71 - 127   | 5   | 20                |          |           |
| trans-1,2-Dichloroethene     | 99        | 132  | 71 - 119   | 28  | 25                |          |           |
| Trichloroethene              | 104       | 111  | 70 - 125   | 6   | 20                |          |           |
| Surrogate                    | LCS % Rec |      | LCSD % Rec |     | Acceptance Limits |          |           |
| 1,2-Dichloroethane-d4 (Surr) | 76        |      | 69         |     | 50 - 139          |          |           |
| Dibromofluoromethane (Surr)  | 81        |      | 73         |     | 60 - 133          |          |           |
| Toluene-d8 (Surr)            | 83        |      | 73         |     | 68 - 143          |          |           |
| 4-Bromofluorobenzene (Surr)  | 85        |      | 74         |     | 62 - 133          |          |           |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Laboratory Control/

Laboratory Duplicate Data Report - Batch: 280-31337

Method: 8260B

Preparation: 5030B

LCS Lab Sample ID: LCS 280-31337/2-A

Units: ug/Kg

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/15/2010 1458

Date Prepared: 09/14/2010 1419

LCSD Lab Sample ID: LCSD 280-31337/3-A

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/15/2010 1517

Date Prepared: 09/14/2010 1419

| Analyte                  | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|--------------------------|------------------|-------------------|-----------------|------------------|
| 1,1,1-Trichloroethane    | 1990             | 1980              | 2110            | 2300             |
| 1,1-Dichloroethane       | 1990             | 1980              | 1990            | 2060             |
| 1,1-Dichloroethene       | 1990             | 1980              | 2110            | 2240             |
| 1,2-Dibromoethane        | 1990             | 1980              | 1740            | 1790             |
| 1,2-Dichloropropane      | 1990             | 1980              | 1970            | 2070             |
| 1,3-Dichlorobenzene      | 1990             | 1980              | 2250            | 2280             |
| Benzene                  | 1990             | 1980              | 2000            | 2140             |
| Carbon tetrachloride     | 1990             | 1980              | 2180            | 2350             |
| Chlorobenzene            | 1990             | 1980              | 2000            | 2150             |
| Chloroform               | 1990             | 1980              | 1940            | 2030             |
| Dichlorobromomethane     | 1990             | 1980              | 1870            | 1990             |
| Ethylbenzene             | 1990             | 1980              | 2170            | 2350             |
| Methylene Chloride       | 1990             | 1980              | 2050            | 2030             |
| Tetrachloroethene        | 1990             | 1980              | 2200            | 2230             |
| Toluene                  | 1990             | 1980              | 2090            | 2200             |
| trans-1,2-Dichloroethene | 1990             | 1980              | 1970            | 2610             |
| Trichloroethene          | 1990             | 1980              | 2060            | 2190             |



## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/

**Matrix Spike Duplicate Recovery Report - Batch: 280-31337**

**Method: 8260B**

**Preparation: 5030B**

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1715  
Date Prepared: 09/14/2010 1419

Analysis Batch: 280-31597  
Prep Batch: 280-31337

Instrument ID: MSV\_P  
Lab File ID: P1079.D  
Initial Weight/Volume: 5.034 g  
Final Weight/Volume: 1000 mL

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1735  
Date Prepared: 09/14/2010 1419

Analysis Batch: 280-31597  
Prep Batch: 280-31337

Instrument ID: MSV\_P  
Lab File ID: P1080.D  
Initial Weight/Volume: 5.011 g  
Final Weight/Volume: 1000 mL

| Analyte                      | % Rec.   |     | Limit     | RPD  | RPD Limit         | MS Qual | MSD Qual |
|------------------------------|----------|-----|-----------|------|-------------------|---------|----------|
|                              | MS       | MSD |           |      |                   |         |          |
| 1,1,1-Trichloroethane        | 101      | 101 | 65 - 129  | 0.05 | 20                |         |          |
| 1,1-Dichloroethane           | 98       | 99  | 66 - 121  | 1    | 25                |         |          |
| 1,1-Dichloroethene           | 96       | 95  | 62 - 125  | 0.2  | 29                |         |          |
| 1,2-Dibromoethane            | 86       | 87  | 68 - 125  | 2    | 36                |         |          |
| 1,2-Dichloropropane          | 95       | 98  | 66 - 119  | 3    | 22                |         |          |
| 1,3-Dichlorobenzene          | 58       | 59  | 74 - 119  | 2    | 20                | F       | F        |
| Benzene                      | 84       | 86  | 67 - 125  | 3    | 20                |         |          |
| Carbon tetrachloride         | 100      | 103 | 60 - 137  | 3    | 21                |         |          |
| Chlorobenzene                | 71       | 73  | 72 - 124  | 3    | 20                | F       |          |
| Chloroform                   | 94       | 95  | 69 - 122  | 1    | 20                |         |          |
| Dichlorobromomethane         | 93       | 91  | 67 - 122  | 1    | 23                |         |          |
| Ethylbenzene                 | 85       | 83  | 73 - 127  | 2    | 20                |         |          |
| Methylene Chloride           | 106      | 98  | 49 - 126  | 7    | 22                |         |          |
| Tetrachloroethene            | 81       | 86  | 73 - 131  | 6    | 20                |         |          |
| Toluene                      | 75       | 79  | 71 - 127  | 5    | 20                |         |          |
| trans-1,2-Dichloroethene     | 108      | 89  | 71 - 119  | 19   | 25                |         |          |
| Trichloroethene              | 94       | 94  | 70 - 125  | 0.6  | 20                |         |          |
| Surrogate                    | MS % Rec |     | MSD % Rec |      | Acceptance Limits |         |          |
| 1,2-Dichloroethane-d4 (Surr) | 75       |     | 73        |      | 50 - 139          |         |          |
| Dibromofluoromethane (Surr)  | 77       |     | 75        |      | 60 - 133          |         |          |
| Toluene-d8 (Surr)            | 56       | X   | 57        | X    | 68 - 143          |         |          |
| 4-Bromofluorobenzene (Surr)  | 46       | X   | 46        | X    | 62 - 133          |         |          |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

## Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31337

Method: 8260B

Preparation: 5030B

MS Lab Sample ID: 280-7326-1  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1715  
 Date Prepared: 09/14/2010 1419

Units: ug/Kg

MSD Lab Sample ID: 280-7326-1  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1735  
 Date Prepared: 09/14/2010 1419

| Analyte                  | Sample<br>Result/Qual | MS Spike<br>Amount | MSD Spike<br>Amount | MS<br>Result/Qual | MSD<br>Result/Qual |
|--------------------------|-----------------------|--------------------|---------------------|-------------------|--------------------|
| 1,1,1-Trichloroethane    | ND                    | 1990               | 2000                | 2020              | 2020               |
| 1,1-Dichloroethane       | ND                    | 1990               | 2000                | 1940              | 1970               |
| 1,1-Dichloroethene       | ND                    | 1990               | 2000                | 1900              | 1900               |
| 1,2-Dibromoethane        | ND                    | 1990               | 2000                | 1700              | 1740               |
| 1,2-Dichloropropane      | ND                    | 1990               | 2000                | 1890              | 1950               |
| 1,3-Dichlorobenzene      | ND                    | 1990               | 2000                | 1150 F            | 1170 F             |
| Benzene                  | ND                    | 1990               | 2000                | 1670              | 1720               |
| Carbon tetrachloride     | ND                    | 1990               | 2000                | 1990              | 2050               |
| Chlorobenzene            | ND                    | 1990               | 2000                | 1420 F            | 1460               |
| Chloroform               | ND                    | 1990               | 2000                | 1880              | 1900               |
| Dichlorobromomethane     | ND                    | 1990               | 2000                | 1840              | 1820               |
| Ethylbenzene             | ND                    | 1990               | 2000                | 1690              | 1650               |
| Methylene Chloride       | ND                    | 1990               | 2000                | 2110              | 1960               |
| Tetrachloroethene        | ND                    | 1990               | 2000                | 1610              | 1710               |
| Toluene                  | ND                    | 1990               | 2000                | 1490              | 1570               |
| trans-1,2-Dichloroethene | ND                    | 1990               | 2000                | 2150              | 1770               |
| Trichloroethene          | ND                    | 1990               | 2000                | 1870              | 1880               |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Method Blank - Batch: 280-31384

Method: 8270C

Preparation: 3550C

Lab Sample ID: MB 280-31384/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 1823  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384  
Units: ug/Kg

Instrument ID: MSS\_K  
Lab File ID: K6683.D  
Initial Weight/Volume: 30.3 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

| Analyte                       | Result | Qual | RL   |
|-------------------------------|--------|------|------|
| Acenaphthene                  | ND     |      | 330  |
| Acenaphthylene                | ND     |      | 330  |
| Acetophenone                  | ND     |      | 330  |
| 2-Acetylaminofluorene         | ND     |      | 3300 |
| Acrylamide                    | ND     |      | 1600 |
| Aniline                       | ND     |      | 330  |
| Anthracene                    | ND     |      | 330  |
| Benzal chloride               | ND     |      | 2700 |
| Benzo[a]anthracene            | ND     |      | 330  |
| Benzo[a]pyrene                | ND     |      | 330  |
| Benzo[b]fluoranthene          | ND     |      | 330  |
| Benzo[g,h,i]perylene          | ND     |      | 330  |
| Benzo[k]fluoranthene          | ND     |      | 330  |
| Bis(2-chloroethoxy)methane    | ND     |      | 330  |
| Bis(2-chloroethyl)ether       | ND     |      | 330  |
| bis (2-chloroisopropyl) ether | ND     |      | 330  |
| Bis(2-ethylhexyl) phthalate   | ND     |      | 330  |
| 4-Bromophenyl phenyl ether    | ND     |      | 330  |
| Butyl benzyl phthalate        | ND     |      | 330  |
| Carbofuran phenol             | ND     |      | 2700 |
| 4-Chloroaniline               | ND     |      | 330  |
| 4-Chloro-3-methylphenol       | ND     |      | 330  |
| 2-Chloronaphthalene           | ND     |      | 330  |
| 2-Chlorophenol                | ND     |      | 330  |
| Chrysene                      | ND     |      | 330  |
| Dibenz(a,h)anthracene         | ND     |      | 330  |
| 1,2-Dichlorobenzene           | ND     |      | 330  |
| 1,3-Dichlorobenzene           | ND     |      | 330  |
| 1,4-Dichlorobenzene           | ND     |      | 330  |
| 2,4-Dichlorophenol            | ND     |      | 330  |
| 2,6-Dichlorophenol            | ND     |      | 330  |
| Diethyl phthalate             | ND     |      | 650  |
| 2,4-Dimethylphenol            | ND     |      | 330  |
| Dimethyl phthalate            | ND     |      | 330  |
| Di-n-butyl phthalate          | ND     |      | 330  |
| 1,4-Dinitrobenzene            | ND     |      | 330  |
| 4,6-Dinitro-2-methylphenol    | ND     |      | 1600 |
| 2,4-Dinitrophenol             | ND     |      | 1600 |
| 2,4-Dinitrotoluene            | ND     |      | 330  |
| 2,6-Dinitrotoluene            | ND     |      | 330  |
| Di-n-octyl phthalate          | ND     |      | 330  |
| Diphenylamine                 | ND     |      | 330  |
| Disulfoton                    | ND     |      | 1600 |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Method Blank - Batch: 280-31384

Method: 8270C

Preparation: 3550C

Lab Sample ID: MB 280-31384/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 1823  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384  
Units: ug/Kg

Instrument ID: MSS\_K  
Lab File ID: K6683.D  
Initial Weight/Volume: 30.3 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

| Analyte                                  | Result | Qual | RL   |
|--|--------|------|------|
| Parathion                                | ND     |      | 1600 |
| Famphur                                  | ND     |      | 650  |
| Fluoranthene                             | ND     |      | 330  |
| Fluorene                                 | ND     |      | 330  |
| Hexachlorobenzene                        | ND     |      | 330  |
| Hexachlorobutadiene                      | ND     |      | 330  |
| Hexachlorocyclopentadiene                | ND     |      | 1600 |
| Hexachloroethane                         | ND     |      | 330  |
| Hexachloropropene                        | ND     |      | 3300 |
| Indeno[1,2,3-cd]pyrene                   | ND     |      | 330  |
| Isosafrole                               | ND     |      | 650  |
| Methapyrilene                            | ND     |      | 1600 |
| 3-Methylcholanthrene                     | ND     |      | 650  |
| 4,4'-Methylene bis(2-chloroaniline)      | ND     |      | 330  |
| Methyl parathion                         | ND     |      | 1600 |
| 2-Methylphenol                           | ND     |      | 330  |
| 3 & 4 Methylphenol                       | ND     |      | 330  |
| Naphthalene                              | ND     |      | 330  |
| 2-Nitroaniline                           | ND     |      | 1600 |
| 3-Nitroaniline                           | ND     |      | 1600 |
| 4-Nitroaniline                           | ND     |      | 1600 |
| Nitrobenzene                             | ND     |      | 330  |
| 5-Nitro-o-toluidine                      | ND     |      | 650  |
| 2-Nitrophenol                            | ND     |      | 330  |
| 4-Nitrophenol                            | ND     |      | 1600 |
| N-Nitrosodiethylamine                    | ND     |      | 330  |
| N-Nitrosodimethylamine                   | ND     |      | 330  |
| N-Nitrosodi-n-butylamine                 | ND     |      | 330  |
| N-Nitrosodi-n-propylamine                | ND     |      | 330  |
| n-Nitrosodiphenylamine(as diphenylamine) | ND     |      | 330  |
| N-Nitrosomethylethylamine                | ND     |      | 330  |
| N-Nitrosomorpholine                      | ND     |      | 330  |
| N-Nitrosopiperidine                      | ND     |      | 330  |
| N-Nitrosopyrrolidine                     | ND     |      | 330  |
| Pentachlorobenzene                       | ND     |      | 330  |
| Pentachloroethane                        | ND     |      | 1600 |
| Pentachloronitrobenzene                  | ND     |      | 1600 |
| Pentachlorophenol                        | ND     |      | 1600 |
| Phenacetin                               | ND     |      | 650  |
| Phenanthrene                             | ND     |      | 330  |
| Phenol                                   | ND     |      | 330  |
| Phorate                                  | ND     |      | 1600 |
| Phthalic acid                            | ND     |      | 5200 |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Method Blank - Batch: 280-31384

Method: 8270C

Preparation: 3550C

Lab Sample ID: MB 280-31384/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 1823  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384  
Units: ug/Kg

Instrument ID: MSS\_K  
Lab File ID: K6683.D  
Initial Weight/Volume: 30.3 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

| Analyte                          | Result | Qual | RL   |
|----------------------------------|--------|------|------|
| Phthalic anhydride               | ND     |      | 5200 |
| Pronamide                        | ND     |      | 650  |
| Pyrene                           | ND     |      | 330  |
| Pyridine                         | ND     |      | 650  |
| Safrole                          | ND     |      | 1600 |
| 1,2,4,5-Tetrachlorobenzene       | ND     |      | 330  |
| 2,3,4,6-Tetrachlorophenol        | ND     |      | 1600 |
| 2,4,6 - Tribromophenol           | ND     |      | 330  |
| 1,2,4-Trichlorobenzene           | ND     |      | 330  |
| 2,4,5-Trichlorophenol            | ND     |      | 330  |
| 2,4,6-Trichlorophenol            | ND     |      | 330  |
| Triethyl amine                   | ND     |      | 2700 |
| Tris(2,3-dibromopropyl)phosphate | ND     |      | 830  |
| 2-sec-Butyl-4,6-dinitrophenol    | ND     |      | 650  |

| Surrogate        | % Rec | Acceptance Limits |
|------------------|-------|-------------------|
| 2-Fluorobiphenyl | 71    | 30 - 120          |
| 2-Fluorophenol   | 72    | 10 - 133          |
| Nitrobenzene-d5  | 69    | 10 - 137          |
| Phenol-d5        | 73    | 10 - 124          |
| Terphenyl-d14    | 81    | 10 - 129          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-31384**

**Method: 8270C  
Preparation: 3550C**

LCS Lab Sample ID: LCS 280-31384/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 1843  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384  
Units: ug/Kg

Instrument ID: MSS\_K  
Lab File ID: K6684.D  
Initial Weight/Volume: 30.6 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

LCSD Lab Sample ID: LCSD 280-31384/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 1904  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384  
Units: ug/Kg

Instrument ID: MSS\_K  
Lab File ID: K6685.D  
Initial Weight/Volume: 30.7 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

| Analyte                   | % Rec     |      | Limit      | RPD | RPD Limit         | LCS Qual | LCSD Qual |
|---------------------------|-----------|------|------------|-----|-------------------|----------|-----------|
|                           | LCS       | LCSD |            |     |                   |          |           |
| Acenaphthene              | 77        | 78   | 51 - 120   | 0.7 | 30                |          |           |
| 4-Chloro-3-methylphenol   | 76        | 76   | 55 - 120   | 0.9 | 30                |          |           |
| 2-Chlorophenol            | 79        | 80   | 55 - 120   | 1   | 30                |          |           |
| 1,4-Dichlorobenzene       | 74        | 75   | 50 - 120   | 1   | 30                |          |           |
| 2,4-Dinitrotoluene        | 81        | 82   | 50 - 120   | 1   | 30                |          |           |
| 4-Nitrophenol             | 67        | 65   | 30 - 120   | 4   | 30                |          |           |
| N-Nitrosodi-n-propylamine | 76        | 77   | 50 - 120   | 1   | 30                |          |           |
| Pentachlorophenol         | 60        | 60   | 27 - 120   | 0.4 | 30                |          |           |
| Phenol                    | 78        | 79   | 50 - 120   | 1   | 30                |          |           |
| Pyrene                    | 85        | 85   | 32 - 120   | 0.7 | 30                |          |           |
| 1,2,4-Trichlorobenzene    | 71        | 72   | 51 - 120   | 0.5 | 30                |          |           |
| Surrogate                 | LCS % Rec |      | LCSD % Rec |     | Acceptance Limits |          |           |
| 2-Fluorobiphenyl          | 78        |      | 79         |     | 30 - 120          |          |           |
| 2-Fluorophenol            | 76        |      | 79         |     | 10 - 133          |          |           |
| Nitrobenzene-d5           | 74        |      | 76         |     | 10 - 137          |          |           |
| Phenol-d5                 | 79        |      | 80         |     | 10 - 124          |          |           |
| Terphenyl-d14             | 86        |      | 88         |     | 10 - 129          |          |           |



## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Laboratory Control/

Laboratory Duplicate Data Report - Batch: 280-31384

Method: 8270C

Preparation: 3550C

LCS Lab Sample ID: LCS 280-31384/2-A

Units: ug/Kg

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/23/2010 1843

Date Prepared: 09/14/2010 2200

LCSD Lab Sample ID: LCSD 280-31384/3-A

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/23/2010 1904

Date Prepared: 09/14/2010 2200

| Analyte                   | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|---------------------------|------------------|-------------------|-----------------|------------------|
| Acenaphthene              | 3270             | 3260              | 2510            | 2520             |
| 4-Chloro-3-methylphenol   | 4900             | 4890              | 3730            | 3700             |
| 2-Chlorophenol            | 4900             | 4890              | 3880            | 3930             |
| 1,4-Dichlorobenzene       | 3270             | 3260              | 2420            | 2450             |
| 2,4-Dinitrotoluene        | 3270             | 3260              | 2640            | 2660             |
| 4-Nitrophenol             | 4900             | 4890              | 3280            | 3160             |
| N-Nitrosodi-n-propylamine | 3270             | 3260              | 2480            | 2510             |
| Pentachlorophenol         | 4900             | 4890              | 2920            | 2940             |
| Phenol                    | 4900             | 4890              | 3820            | 3860             |
| Pyrene                    | 3270             | 3260              | 2790            | 2770             |
| 1,2,4-Trichlorobenzene    | 3270             | 3260              | 2330            | 2340             |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31384

Method: 8270C

Preparation: 3550C

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/23/2010 2347  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384

Instrument ID: MSS\_K  
Lab File ID: K6699.D  
Initial Weight/Volume: 30.1 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/24/2010 0008  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-32859  
Prep Batch: 280-31384

Instrument ID: MSS\_K  
Lab File ID: K6700.D  
Initial Weight/Volume: 30.3 g  
Final Weight/Volume: 1000 uL  
Injection Volume: 0.5 uL

| Analyte                   | % Rec.   |     | Limit     | RPD | RPD Limit         | MS Qual | MSD Qual |
|---------------------------|----------|-----|-----------|-----|-------------------|---------|----------|
|                           | MS       | MSD |           |     |                   |         |          |
| Acenaphthene              | 53       | 51  | 29 - 120  | 3   | 60                |         |          |
| 4-Chloro-3-methylphenol   | 60       | 60  | 10 - 120  | 0.1 | 60                |         |          |
| 2-Chlorophenol            | 56       | 52  | 10 - 120  | 8   | 60                |         |          |
| 1,4-Dichlorobenzene       | 53       | 49  | 23 - 120  | 7   | 60                |         |          |
| 2,4-Dinitrotoluene        | 66       | 66  | 10 - 132  | 0.5 | 60                |         |          |
| 4-Nitrophenol             | 57       | 57  | 5 - 152   | 0.5 | 60                |         |          |
| N-Nitrosodi-n-propylamine | 56       | 52  | 10 - 135  | 8   | 60                |         |          |
| Pentachlorophenol         | 42       | 41  | 5 - 120   | 3   | 60                |         |          |
| Phenol                    | 58       | 54  | 10 - 120  | 8   | 60                |         |          |
| Pyrene                    | 29       | 28  | 10 - 121  | 6   | 60                |         |          |
| 1,2,4-Trichlorobenzene    | 50       | 47  | 25 - 120  | 8   | 60                |         |          |
| Surrogate                 | MS % Rec |     | MSD % Rec |     | Acceptance Limits |         |          |
| 2-Fluorobiphenyl          | 57       |     | 53        |     | 30 - 120          |         |          |
| 2-Fluorophenol            | 57       |     | 53        |     | 10 - 133          |         |          |
| Nitrobenzene-d5           | 54       |     | 51        |     | 10 - 137          |         |          |
| Phenol-d5                 | 61       |     | 55        |     | 10 - 124          |         |          |
| Terphenyl-d14             | 48       |     | 46        |     | 10 - 129          |         |          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31384

Method: 8270C

Preparation: 3550C

MS Lab Sample ID: 280-7326-1

Units: ug/Kg

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/23/2010 2347

Date Prepared: 09/14/2010 2200

MSD Lab Sample ID: 280-7326-1

Client Matrix: Solid

Dilution: 1.0

Date Analyzed: 09/24/2010 0008

Date Prepared: 09/14/2010 2200

| Analyte                   | Sample<br>Result/Qual | MS Spike<br>Amount | MSD Spike<br>Amount | MS<br>Result/Qual | MSD<br>Result/Qual |
|---------------------------|-----------------------|--------------------|---------------------|-------------------|--------------------|
| Acenaphthene              | ND                    | 3320               | 3300                | 1750              | 1690               |
| 4-Chloro-3-methylphenol   | ND                    | 4980               | 4950                | 3000              | 2990               |
| 2-Chlorophenol            | ND                    | 4980               | 4950                | 2810              | 2590               |
| 1,4-Dichlorobenzene       | ND                    | 3320               | 3300                | 1750              | 1620               |
| 2,4-Dinitrotoluene        | ND                    | 3320               | 3300                | 2180              | 2190               |
| 4-Nitrophenol             | ND                    | 4980               | 4950                | 2840              | 2830               |
| N-Nitrosodi-n-propylamine | ND                    | 3320               | 3300                | 1860              | 1720               |
| Pentachlorophenol         | ND                    | 4980               | 4950                | 2100              | 2030               |
| Phenol                    | ND                    | 4980               | 4950                | 2930              | 2700               |
| Pyrene                    | ND                    | 3320               | 3300                | 970               | 916                |
| 1,2,4-Trichlorobenzene    | ND                    | 3320               | 3300                | 1660              | 1540               |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Method Blank - Batch: 280-31594

Method: 8015B

Preparation: N/A

Lab Sample ID: MB 280-31516/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1415  
Date Prepared: N/A  
Date Leached: 09/15/2010 1134

Analysis Batch: 280-31594  
Prep Batch: N/A  
Units: mg/L

Instrument ID: GCS\_A  
Lab File ID: 056B0601.D  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL  
Injection Volume: 1 uL  
Column ID: PRIMARY

| Analyte  | Result | Qual | RL  |
|----------|--------|------|-----|
| Methanol | ND     |      | 1.0 |

| Surrogate | % Rec | Acceptance Limits |
|-----------|-------|-------------------|
| Propanol  | 101   | 50 - 150          |

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 280-31594

Method: 8015B

Preparation: N/A

LCS Lab Sample ID: LCS 280-31516/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1344  
Date Prepared: N/A  
Date Leached: 09/15/2010 1134

Analysis Batch: 280-31594  
Prep Batch: N/A  
Units: mg/L

Instrument ID: GCS\_A  
Lab File ID: 054B0401.D  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL  
Injection Volume: 1 uL  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 280-31516/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1359  
Date Prepared: N/A  
Date Leached: 09/15/2010 1134

Analysis Batch: 280-31594  
Prep Batch: N/A  
Units: mg/L

Instrument ID: GCS\_A  
Lab File ID: 055B0501.D  
Initial Weight/Volume:  
Final Weight/Volume: 1.0 mL  
Injection Volume: 1 uL  
Column ID: PRIMARY

| Analyte   | % Rec.    |      | Limit      | RPD               | RPD Limit | LCS Qual | LCSD Qual |
|-----------|-----------|------|------------|-------------------|-----------|----------|-----------|
|           | LCS       | LCSD |            |                   |           |          |           |
| Methanol  | 91        | 91   | 50 - 150   | 0.1               | 30        |          |           |
| Surrogate | LCS % Rec |      | LCSD % Rec | Acceptance Limits |           |          |           |
| Propanol  | 104       |      | 104        | 50 - 150          |           |          |           |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Laboratory Control/

Laboratory Duplicate Data Report - Batch: 280-31594

Method: 8015B

Preparation: N/A

LCS Lab Sample ID: LCS 280-31516/1-A Units: mg/L  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1344  
 Date Prepared: N/A  
 Date Leached: 09/15/2010 1134

LCSD Lab Sample ID: LCSD 280-31516/2-A  
 Client Matrix: Solid  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1359  
 Date Prepared: N/A  
 Date Leached: 09/15/2010 1134

| Analyte  | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|----------|------------------|-------------------|-----------------|------------------|
| Methanol | 3.35             | 3.35              | 3.05            | 3.04             |

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31594

Method: 8015B

Preparation: N/A

MS Lab Sample ID: 280-7326-1 Analysis Batch: 280-31594  
 Client Matrix: Solid Prep Batch: N/A  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1501  
 Date Prepared: N/A  
 Date Leached: 09/15/2010 1134

Instrument ID: GCS\_A  
 Lab File ID: 059B0901.D  
 Initial Weight/Volume:  
 Final Weight/Volume: 1.0 mL  
 Injection Volume: 1 uL  
 Column ID: PRIMARY

MSD Lab Sample ID: 280-7326-1 Analysis Batch: 280-31594  
 Client Matrix: Solid Prep Batch: N/A  
 Dilution: 1.0  
 Date Analyzed: 09/15/2010 1516  
 Date Prepared: N/A  
 Date Leached: 09/15/2010 1134

Instrument ID: GCS\_A  
 Lab File ID: 060B1001.D  
 Initial Weight/Volume:  
 Final Weight/Volume: 1.0 mL  
 Injection Volume: 1 uL  
 Column ID: PRIMARY

| Analyte   | % Rec. |          | Limit     | RPD | RPD Limit | MS Qual           | MSD Qual |
|-----------|--------|----------|-----------|-----|-----------|-------------------|----------|
|           | MS     | MSD      |           |     |           |                   |          |
| Methanol  | 88     | 88       | 50 - 150  | 0.3 | 30        |                   |          |
| Surrogate |        | MS % Rec | MSD % Rec |     |           | Acceptance Limits |          |
| Propanol  |        | 97       | 96        |     |           | 50 - 150          |          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31594

Method: 8015B

Preparation: N/A

MS Lab Sample ID: 280-7326-1 Units: mg/L  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1501  
Date Prepared: N/A  
Date Leached: 09/15/2010 1134

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/15/2010 1516  
Date Prepared: N/A  
Date Leached: 09/15/2010 1134

| Analyte  | Sample<br>Result/Qual | MS Spike<br>Amount | MSD Spike<br>Amount | MS<br>Result/Qual | MSD<br>Result/Qual |
|----------|-----------------------|--------------------|---------------------|-------------------|--------------------|
| Methanol | ND                    | 3.42               | 3.43                | 3.03              | 3.02               |



# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Method Blank - Batch: 280-31388

Method: 8081A

Preparation: 3550C

Lab Sample ID: MB 280-31388/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1740  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-31865  
Prep Batch: 280-31388  
Units: ug/Kg

Instrument ID: GCS\_P2  
Lab File ID: 020F2001.D  
Initial Weight/Volume: 30.4 g  
Final Weight/Volume: 10000 uL  
Injection Volume:  
Column ID: PRIMARY

| Analyte                | Result | Qual              | RL  |
|------------------------|--------|-------------------|-----|
| 2,4'-DDD               | ND     |                   | 1.7 |
| 2,4'-DDE               | ND     |                   | 1.7 |
| 2,4'-DDT               | ND     |                   | 1.7 |
| 4,4'-DDD               | ND     |                   | 1.7 |
| 4,4'-DDE               | ND     |                   | 1.7 |
| 4,4'-DDT               | ND     |                   | 1.7 |
| Aldrin                 | ND     |                   | 1.7 |
| alpha-BHC              | ND     |                   | 1.7 |
| alpha-Chlordane        | ND     |                   | 1.7 |
| beta-BHC               | ND     |                   | 1.7 |
| Chlordane (n.o.s.)     | ND     |                   | 1.7 |
| delta-BHC              | ND     |                   | 1.7 |
| Dieldrin               | ND     |                   | 1.7 |
| Endosulfan I           | ND     |                   | 1.7 |
| Endosulfan II          | ND     |                   | 1.7 |
| Endosulfan sulfate     | ND     |                   | 1.7 |
| Endrin                 | ND     |                   | 1.7 |
| Endrin aldehyde        | ND     |                   | 1.7 |
| Endrin ketone          | ND     |                   | 1.7 |
| gamma-BHC (Lindane)    | ND     |                   | 1.7 |
| gamma-Chlordane        | ND     |                   | 1.7 |
| Heptachlor             | ND     |                   | 1.7 |
| Heptachlor epoxide     | ND     |                   | 1.7 |
| Kepone                 | ND     |                   | 74  |
| Methoxychlor           | ND     |                   | 3.3 |
| Toxaphene              | ND     |                   | 66  |
| Isodrin                | ND     |                   | 1.7 |
| Surrogate              | % Rec  | Acceptance Limits |     |
| DCB Decachlorobiphenyl | 103    | 63 - 124          |     |
| Tetrachloro-m-xylene   | 86     | 59 - 115          |     |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-31388**

**Method: 8081A  
Preparation: 3550C**

LCS Lab Sample ID: LCS 280-31388/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1601  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-31865  
Prep Batch: 280-31388  
Units: ug/Kg

Instrument ID: GCS\_P2  
Lab File ID: 014F1401.D  
Initial Weight/Volume: 30.3 g  
Final Weight/Volume: 10000 uL  
Injection Volume:  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 280-31388/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1617  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-31865  
Prep Batch: 280-31388  
Units: ug/Kg

Instrument ID: GCS\_P2  
Lab File ID: 015F1501.D  
Initial Weight/Volume: 30.1 g  
Final Weight/Volume: 10000 uL  
Injection Volume:  
Column ID: PRIMARY

| Analyte                | % Rec.    |      | Limit      | RPD  | RPD Limit         | LCS Qual | LCSD Qual |
|------------------------|-----------|------|------------|------|-------------------|----------|-----------|
|                        | LCS       | LCSD |            |      |                   |          |           |
| 4,4'-DDD               | 83        | 82   | 57 - 118   | 0.5  | 20                |          |           |
| 4,4'-DDE               | 91        | 91   | 61 - 115   | 0.7  | 15                |          |           |
| 4,4'-DDT               | 93        | 91   | 53 - 125   | 0.9  | 29                |          |           |
| Aldrin                 | 91        | 90   | 60 - 115   | 0.02 | 50                |          |           |
| alpha-BHC              | 87        | 85   | 54 - 115   | 0.8  | 17                |          |           |
| alpha-Chlordane        | 91        | 90   | 60 - 115   | 0.2  | 18                |          |           |
| beta-BHC               | 84        | 83   | 58 - 115   | 0.2  | 17                |          |           |
| delta-BHC              | 87        | 85   | 62 - 115   | 2    | 19                |          |           |
| Dieldrin               | 97        | 96   | 63 - 117   | 0.9  | 25                |          |           |
| Endosulfan I           | 92        | 91   | 55 - 115   | 0.6  | 26                |          |           |
| Endosulfan II          | 100       | 99   | 60 - 115   | 1    | 20                |          |           |
| Endosulfan sulfate     | 94        | 93   | 58 - 118   | 0.7  | 22                |          |           |
| Endrin                 | 98        | 94   | 61 - 121   | 3    | 30                |          |           |
| Endrin aldehyde        | 83        | 83   | 54 - 115   | 0.2  | 29                |          |           |
| Endrin ketone          | 98        | 98   | 61 - 118   | 0.8  | 20                |          |           |
| gamma-BHC (Lindane)    | 85        | 84   | 59 - 115   | 0.8  | 24                |          |           |
| gamma-Chlordane        | 44        | 90   | 60 - 115   | 69   | 21                |          |           |
| Heptachlor             | 86        | 85   | 61 - 115   | 1    | 18                |          |           |
| Heptachlor epoxide     | 95        | 94   | 62 - 112   | 0.5  | 18                |          |           |
| Methoxychlor           | 92        | 89   | 52 - 123   | 3    | 23                |          |           |
| Surrogate              | LCS % Rec |      | LCSD % Rec |      | Acceptance Limits |          |           |
| DCB Decachlorobiphenyl | 102       |      | 100        |      | 63 - 124          |          |           |
| Tetrachloro-m-xylene   | 88        |      | 88         |      | 59 - 115          |          |           |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-31388**

**Method: 8081A  
Preparation: 3550C**

LCS Lab Sample ID: LCS 280-31388/2-A      Units: ug/Kg  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1601  
Date Prepared: 09/14/2010 2200

LCSD Lab Sample ID: LCSD 280-31388/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1617  
Date Prepared: 09/14/2010 2200

| Analyte             | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|---------------------|------------------|-------------------|-----------------|------------------|
| 4,4'-DDD            | 16.5             | 16.6              | 13.7            | 13.6             |
| 4,4'-DDE            | 16.5             | 16.6              | 15.1            | 15.2             |
| 4,4'-DDT            | 16.5             | 16.6              | 15.3            | 15.1             |
| Aldrin              | 16.5             | 16.6              | 15.0            | 15.0             |
| alpha-BHC           | 16.5             | 16.6              | 14.3            | 14.2             |
| alpha-Chlordane     | 16.5             | 16.6              | 15.0            | 15.0             |
| beta-BHC            | 16.5             | 16.6              | 13.8            | 13.8             |
| delta-BHC           | 16.5             | 16.6              | 14.4            | 14.2             |
| Dieldrin            | 16.5             | 16.6              | 16.0            | 15.9             |
| Endosulfan I        | 16.5             | 16.6              | 15.2            | 15.1             |
| Endosulfan II       | 16.5             | 16.6              | 16.6            | 16.4             |
| Endosulfan sulfate  | 16.5             | 16.6              | 15.6            | 15.4             |
| Endrin              | 16.5             | 16.6              | 16.1            | 15.6             |
| Endrin aldehyde     | 16.5             | 16.6              | 13.7            | 13.7             |
| Endrin ketone       | 16.5             | 16.6              | 16.1            | 16.2             |
| gamma-BHC (Lindane) | 16.5             | 16.6              | 14.1            | 14.0             |
| gamma-Chlordane     | 16.5             | 16.6              | 7.28            | 15.0             |
| Heptachlor          | 16.5             | 16.6              | 14.2            | 14.0             |
| Heptachlor epoxide  | 16.5             | 16.6              | 15.6            | 15.6             |
| Methoxychlor        | 16.5             | 16.6              | 15.1            | 14.7             |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

## Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-31388

Method: 8081A  
Preparation: 3550C

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1650  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-31865  
Prep Batch: 280-31388

Instrument ID: GCS\_P2  
Lab File ID: 017F1701.D  
Initial Weight/Volume: 30.4 g  
Final Weight/Volume: 10000 uL  
Injection Volume:  
Column ID: PRIMARY

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1707  
Date Prepared: 09/14/2010 2200

Analysis Batch: 280-31865  
Prep Batch: 280-31388

Instrument ID: GCS\_P2  
Lab File ID: 018F1801.D  
Initial Weight/Volume: 30.5 g  
Final Weight/Volume: 10000 uL  
Injection Volume:  
Column ID: PRIMARY

| Analyte                | % Rec.   |     | Limit     | RPD               | RPD Limit | MS Qual | MSD Qual |
|------------------------|----------|-----|-----------|-------------------|-----------|---------|----------|
|                        | MS       | MSD |           |                   |           |         |          |
| 4,4'-DDD               | 94       | 99  | 57 - 118  | 4                 | 20        |         |          |
| 4,4'-DDE               | 101      | 105 | 61 - 115  | 4                 | 15        |         |          |
| 4,4'-DDT               | 103      | 103 | 53 - 125  | 1                 | 29        |         |          |
| Aldrin                 | 82       | 88  | 60 - 115  | 7                 | 50        |         |          |
| alpha-BHC              | 75       | 86  | 54 - 115  | 13                | 17        |         |          |
| alpha-Chlordane        | 98       | 104 | 60 - 115  | 6                 | 18        |         |          |
| beta-BHC               | 80       | 84  | 58 - 115  | 4                 | 17        |         |          |
| delta-BHC              | 102      | 99  | 62 - 115  | 4                 | 19        |         |          |
| Dieldrin               | 122      | 125 | 63 - 117  | 3                 | 25        | F       | F        |
| Endosulfan I           | 84       | 89  | 55 - 115  | 6                 | 26        |         |          |
| Endosulfan II          | 96       | 102 | 60 - 115  | 5                 | 20        |         |          |
| Endosulfan sulfate     | 87       | 88  | 58 - 118  | 1                 | 22        |         |          |
| Endrin                 | 94       | 101 | 61 - 121  | 7                 | 30        |         |          |
| Endrin aldehyde        | 88       | 89  | 54 - 115  | 0.05              | 29        |         |          |
| Endrin ketone          | 97       | 101 | 61 - 118  | 4                 | 20        |         |          |
| gamma-BHC (Lindane)    | 79       | 86  | 59 - 115  | 8                 | 24        |         |          |
| gamma-Chlordane        | 86       | 91  | 60 - 115  | 5                 | 21        |         |          |
| Heptachlor             | 77       | 83  | 61 - 115  | 8                 | 18        |         |          |
| Heptachlor epoxide     | 91       | 97  | 62 - 112  | 5                 | 18        |         |          |
| Methoxychlor           | 85       | 85  | 52 - 123  | 1                 | 23        |         |          |
| Surrogate              | MS % Rec |     | MSD % Rec | Acceptance Limits |           |         |          |
| DCB Decachlorobiphenyl | 100      |     | 104       | 63 - 124          |           |         |          |
| Tetrachloro-m-xylene   | 60       |     | 64        | 59 - 115          |           |         |          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/ Matrix Spike Duplicate Recovery Report - Batch: 280-31388

Method: 8081A  
Preparation: 3550C

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1650  
Date Prepared: 09/14/2010 2200

Units: ug/Kg

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/16/2010 1707  
Date Prepared: 09/14/2010 2200

| Analyte             | Sample<br>Result/Qual | MS Spike<br>Amount | MSD Spike<br>Amount | MS<br>Result/Qual | MSD<br>Result/Qual |
|---------------------|-----------------------|--------------------|---------------------|-------------------|--------------------|
| 4,4'-DDD            | ND                    | 16.4               | 16.4                | 15.5              | 16.2               |
| 4,4'-DDE            | ND                    | 16.4               | 16.4                | 16.6              | 17.2               |
| 4,4'-DDT            | ND                    | 16.4               | 16.4                | 17.0              | 16.8               |
| Aldrin              | ND                    | 16.4               | 16.4                | 13.5              | 14.5               |
| alpha-BHC           | ND                    | 16.4               | 16.4                | 12.3              | 14.1               |
| alpha-Chlordane     | ND                    | 16.4               | 16.4                | 16.1              | 17.0               |
| beta-BHC            | ND                    | 16.4               | 16.4                | 13.2              | 13.8               |
| delta-BHC           | ND                    | 16.4               | 16.4                | 16.8              | 16.2               |
| Dieldrin            | ND                    | 16.4               | 16.4                | 20.0 F            | 20.6 F             |
| Endosulfan I        | ND                    | 16.4               | 16.4                | 13.8              | 14.7               |
| Endosulfan II       | ND                    | 16.4               | 16.4                | 15.9              | 16.7               |
| Endosulfan sulfate  | 1.7                   | 16.4               | 16.4                | 16.0              | 16.2               |
| Endrin              | ND                    | 16.4               | 16.4                | 15.4              | 16.5               |
| Endrin aldehyde     | ND                    | 16.4               | 16.4                | 14.9              | 14.9               |
| Endrin ketone       | ND                    | 16.4               | 16.4                | 15.9              | 16.5               |
| gamma-BHC (Lindane) | ND                    | 16.4               | 16.4                | 13.0              | 14.1               |
| gamma-Chlordane     | ND                    | 16.4               | 16.4                | 14.2              | 14.9               |
| Heptachlor          | ND                    | 16.4               | 16.4                | 12.6              | 13.6               |
| Heptachlor epoxide  | ND                    | 16.4               | 16.4                | 15.6              | 16.5               |
| Methoxychlor        | ND                    | 16.4               | 16.4                | 14.0              | 13.9               |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Method Blank - Batch: 280-31795

**Method: 8151A**  
**Preparation: 8151A**

Lab Sample ID: MB 280-31795/1-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1505  
Date Prepared: 09/16/2010 2030

Analysis Batch: 280-32677  
Prep Batch: 280-31795  
Units: ug/Kg

Instrument ID: GCS\_M  
Lab File ID: 011B1101.D  
Initial Weight/Volume: 50.4 g  
Final Weight/Volume: 10000 uL  
Injection Volume: 1 uL  
Column ID: PRIMARY

| Analyte           | Result | Qual | RL |
|-------------------|--------|------|----|
| 2,4,5-T           | ND     |      | 20 |
| 2,4-D             | ND     |      | 79 |
| Silvex (2,4,5-TP) | ND     |      | 20 |

| Surrogate                     | % Rec | Acceptance Limits |
|-------------------------------|-------|-------------------|
| 2,4-Dichlorophenylacetic acid | 85    | 31 - 105          |

### Lab Control Sample/ Lab Control Sample Duplicate Recovery Report - Batch: 280-31795

**Method: 8151A**  
**Preparation: 8151A**

LCS Lab Sample ID: LCS 280-31795/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1527  
Date Prepared: 09/16/2010 2030

Analysis Batch: 280-32677  
Prep Batch: 280-31795  
Units: ug/Kg

Instrument ID: GCS\_M  
Lab File ID: 012B1201.D  
Initial Weight/Volume: 50.3 g  
Final Weight/Volume: 10000 uL  
Injection Volume: 1 uL  
Column ID: PRIMARY

LCSD Lab Sample ID: LCSD 280-31795/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1548  
Date Prepared: 09/16/2010 2030

Analysis Batch: 280-32677  
Prep Batch: 280-31795  
Units: ug/Kg

Instrument ID: GCS\_M  
Lab File ID: 013B1301.D  
Initial Weight/Volume: 50.3 g  
Final Weight/Volume: 10000 uL  
Injection Volume: 1 uL  
Column ID: PRIMARY

| Analyte                       | % Rec     |      | Limit      | RPD | RPD Limit         | LCS Qual | LCSD Qual |
|-------------------------------|-----------|------|------------|-----|-------------------|----------|-----------|
|                               | LCS       | LCSD |            |     |                   |          |           |
| 2,4,5-T                       | 90        | 79   | 24 - 98    | 12  | 40                |          |           |
| 2,4-D                         | 93        | 82   | 32 - 97    | 13  | 40                |          |           |
| Silvex (2,4,5-TP)             | 96        | 88   | 53 - 134   | 8   | 40                |          |           |
| Surrogate                     | LCS % Rec |      | LCSD % Rec |     | Acceptance Limits |          |           |
| 2,4-Dichlorophenylacetic acid | 95        |      | 88         |     | 31 - 105          |          |           |



## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

**Laboratory Control/  
Laboratory Duplicate Data Report - Batch: 280-31795**

**Method: 8151A  
Preparation: 8151A**

LCS Lab Sample ID: LCS 280-31795/2-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1527  
Date Prepared: 09/16/2010 2030

Units: ug/Kg

LCSD Lab Sample ID: LCSD 280-31795/3-A  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1548  
Date Prepared: 09/16/2010 2030

| Analyte           | LCS Spike Amount | LCSD Spike Amount | LCS Result/Qual | LCSD Result/Qual |
|-------------------|------------------|-------------------|-----------------|------------------|
| 2,4,5-T           | 95.4             | 95.4              | 85.4            | 75.6             |
| 2,4-D             | 91.5             | 91.5              | 85.1            | ND               |
| Silvex (2,4,5-TP) | 91.5             | 91.5              | 87.4            | 80.6             |

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 280-31795**

**Method: 8151A  
Preparation: 8151A**

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1841  
Date Prepared: 09/16/2010 2030

Analysis Batch: 280-32677  
Prep Batch: 280-31795

Instrument ID: GCS\_M  
Lab File ID: 021B2101.D  
Initial Weight/Volume: 52.0 g  
Final Weight/Volume: 10000 uL  
Injection Volume: 1 uL  
Column ID: PRIMARY

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1902  
Date Prepared: 09/16/2010 2030

Analysis Batch: 280-32677  
Prep Batch: 280-31795

Instrument ID: GCS\_M  
Lab File ID: 022B2201.D  
Initial Weight/Volume: 50.2 g  
Final Weight/Volume: 10000 uL  
Injection Volume: 1 uL  
Column ID: PRIMARY

| Analyte                       | % Rec.   |     | Limit     | RPD               | RPD Limit | MS Qual | MSD Qual |
|-------------------------------|----------|-----|-----------|-------------------|-----------|---------|----------|
|                               | MS       | MSD |           |                   |           |         |          |
| 2,4,5-T                       | 70       | 71  | 24 - 98   | 5                 | 40        |         |          |
| 2,4-D                         | 74       | 75  | 32 - 97   | 4                 | 40        |         |          |
| Silvex (2,4,5-TP)             | 78       | 78  | 53 - 134  | 4                 | 40        |         |          |
| Surrogate                     | MS % Rec |     | MSD % Rec | Acceptance Limits |           |         |          |
| 2,4-Dichlorophenylacetic acid | 102      |     | 72        | 31 - 105          |           |         |          |

## Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-31795

Method: 8151A

Preparation: 8151A

MS Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1841  
Date Prepared: 09/16/2010 2030

Units: ug/Kg

MSD Lab Sample ID: 280-7326-1  
Client Matrix: Solid  
Dilution: 1.0  
Date Analyzed: 09/22/2010 1902  
Date Prepared: 09/16/2010 2030

| Analyte           | Sample<br>Result/Qual | MS Spike<br>Amount | MSD Spike<br>Amount | MS<br>Result/Qual | MSD<br>Result/Qual |
|-------------------|-----------------------|--------------------|---------------------|-------------------|--------------------|
| 2,4,5-T           | ND                    | 92.3               | 95.6                | 64.5              | 68.0               |
| 2,4-D             | ND                    | 88.5               | 91.6                | ND                | ND                 |
| Silvex (2,4,5-TP) | ND                    | 88.5               | 91.6                | 69.0              | 71.9               |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

## Laboratory Chronicle

Lab ID: 280-7326-1

Client ID: SL100906-1009012

Sample Date/Time: 09/13/2010 10:30

Received Date/Time: 09/14/2010 09:30

| Method  | Bottle ID      | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|----------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | 280-7326-C-1-A |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | 280-7326-C-1-A |     | 280-31597      | 280-31337  | 09/15/2010 16:36         | 1   | TAL DEN | HZ      |
| P:3550C | 280-7326-A-1-E |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | 280-7326-A-1-E |     | 280-32859      | 280-31384  | 09/23/2010 23:27         | 1   | TAL DEN | DCK     |
| A:8015B | 280-7326-B-1-A |     | 280-31594      |            | 09/15/2010 14:46         | 1   | TAL DEN | BER     |
| P:3550C | 280-7326-A-1-I |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | 280-7326-A-1-I |     | 280-31865      | 280-31388  | 09/16/2010 16:34         | 1   | TAL DEN | CCL     |
| P:8151A | 280-7326-A-1-L |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | 280-7326-A-1-L |     | 280-32677      | 280-31795  | 09/22/2010 16:10         | 1   | TAL DEN | MK      |

Lab ID: 280-7326-1 MS

Client ID: SL100906-1009012

Sample Date/Time: 09/13/2010 10:30

Received Date/Time: 09/14/2010 09:30

| Method  | Bottle ID         | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|-------------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | 280-7326-C-1-B MS |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | 280-7326-C-1-B MS |     | 280-31597      | 280-31337  | 09/15/2010 17:15         | 1   | TAL DEN | HZ      |
| P:3550C | 280-7326-A-1-F MS |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | 280-7326-A-1-F MS |     | 280-32859      | 280-31384  | 09/23/2010 23:47         | 1   | TAL DEN | DCK     |
| A:8015B | 280-7326-B-1-B MS |     | 280-31594      |            | 09/15/2010 15:01         | 1   | TAL DEN | BER     |
| P:3550C | 280-7326-A-1-J MS |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | 280-7326-A-1-J MS |     | 280-31865      | 280-31388  | 09/16/2010 16:50         | 1   | TAL DEN | CCL     |
| P:8151A | 280-7326-A-1-N MS |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | 280-7326-A-1-N MS |     | 280-32677      | 280-31795  | 09/22/2010 18:41         | 1   | TAL DEN | MK      |

Lab ID: 280-7326-1 MSD

Client ID: SL100906-1009012

Sample Date/Time: 09/13/2010 10:30

Received Date/Time: 09/14/2010 09:30

| Method  | Bottle ID          | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|--------------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | 280-7326-C-1-C MSD |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | 280-7326-C-1-C MSD |     | 280-31597      | 280-31337  | 09/15/2010 17:35         | 1   | TAL DEN | HZ      |
| P:3550C | 280-7326-A-1-G MSD |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | 280-7326-A-1-G MSD |     | 280-32859      | 280-31384  | 09/24/2010 00:08         | 1   | TAL DEN | DCK     |
| A:8015B | 280-7326-B-1-C MSD |     | 280-31594      |            | 09/15/2010 15:16         | 1   | TAL DEN | BER     |
| P:3550C | 280-7326-A-1-K MSD |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | 280-7326-A-1-K MSD |     | 280-31865      | 280-31388  | 09/16/2010 17:07         | 1   | TAL DEN | CCL     |
| P:8151A | 280-7326-A-1-O MSD |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | 280-7326-A-1-O MSD |     | 280-32677      | 280-31795  | 09/22/2010 19:02         | 1   | TAL DEN | MK      |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

## Laboratory Chronicle

Lab ID: 280-7326-2

Client ID: RD100906-1009012

Sample Date/Time: 09/13/2010 10:45

Received Date/Time: 09/14/2010 09:30

| Method  | Bottle ID      | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|----------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | 280-7326-C-2-A |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | 280-7326-C-2-A |     | 280-31597      | 280-31337  | 09/15/2010 16:56         | 1   | TAL DEN | HZ      |
| P:3550C | 280-7326-A-2-C |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | 280-7326-A-2-C |     | 280-32859      | 280-31384  | 09/24/2010 00:48         | 1   | TAL DEN | DCK     |
| A:8015B | 280-7326-B-2-A |     | 280-31594      |            | 09/15/2010 15:32         | 1   | TAL DEN | BER     |
| P:3550C | 280-7326-A-2-E |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | 280-7326-A-2-E |     | 280-31865      | 280-31388  | 09/16/2010 17:23         | 1   | TAL DEN | CCL     |
| P:8151A | 280-7326-A-2-F |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | 280-7326-A-2-F |     | 280-32677      | 280-31795  | 09/22/2010 16:32         | 1   | TAL DEN | MK      |

Lab ID: MB

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

| Method  | Bottle ID        | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|------------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | MB 280-31337/1-A |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | MB 280-31337/1-A |     | 280-31597      | 280-31337  | 09/15/2010 16:16         | 1   | TAL DEN | HZ      |
| P:3550C | MB 280-31384/1-A |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | MB 280-31384/1-A |     | 280-32859      | 280-31384  | 09/23/2010 18:23         | 1   | TAL DEN | DCK     |
| A:8015B | MB 280-31516/3-A |     | 280-31594      |            | 09/15/2010 14:15         | 1   | TAL DEN | BER     |
| P:3550C | MB 280-31388/1-A |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | MB 280-31388/1-A |     | 280-31865      | 280-31388  | 09/16/2010 17:40         | 1   | TAL DEN | CCL     |
| P:8151A | MB 280-31795/1-A |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | MB 280-31795/1-A |     | 280-32677      | 280-31795  | 09/22/2010 15:05         | 1   | TAL DEN | MK      |

Lab ID: LCS

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

| Method  | Bottle ID         | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|-------------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | LCS 280-31337/2-A |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | LCS 280-31337/2-A |     | 280-31597      | 280-31337  | 09/15/2010 14:58         | 1   | TAL DEN | HZ      |
| P:3550C | LCS 280-31384/2-A |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | LCS 280-31384/2-A |     | 280-32859      | 280-31384  | 09/23/2010 18:43         | 1   | TAL DEN | DCK     |
| A:8015B | LCS 280-31516/1-A |     | 280-31594      |            | 09/15/2010 13:44         | 1   | TAL DEN | BER     |
| P:3550C | LCS 280-31388/2-A |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | LCS 280-31388/2-A |     | 280-31865      | 280-31388  | 09/16/2010 16:01         | 1   | TAL DEN | CCL     |
| P:8151A | LCS 280-31795/2-A |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | LCS 280-31795/2-A |     | 280-32677      | 280-31795  | 09/22/2010 15:27         | 1   | TAL DEN | MK      |

# Quality Control Results

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

## Laboratory Chronicle

Lab ID: LCSD

Client ID: N/A

Sample Date/Time: N/A

Received Date/Time: N/A

| Method  | Bottle ID          | Run | Analysis Batch | Prep Batch | Date Prepared / Analyzed | Dil | Lab     | Analyst |
|---------|--------------------|-----|----------------|------------|--------------------------|-----|---------|---------|
| P:5030B | LCSD 280-31337/3-A |     | 280-31597      | 280-31337  | 09/14/2010 14:19         | 1   | TAL DEN | BMS     |
| A:8260B | LCSD 280-31337/3-A |     | 280-31597      | 280-31337  | 09/15/2010 15:17         | 1   | TAL DEN | HZ      |
| P:3550C | LCSD 280-31384/3-A |     | 280-32859      | 280-31384  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8270C | LCSD 280-31384/3-A |     | 280-32859      | 280-31384  | 09/23/2010 19:04         | 1   | TAL DEN | DCK     |
| A:8015B | LCSD 280-31516/2-A |     | 280-31594      |            | 09/15/2010 13:59         | 1   | TAL DEN | BER     |
| P:3550C | LCSD 280-31388/3-A |     | 280-31865      | 280-31388  | 09/14/2010 22:00         | 1   | TAL DEN | JCV     |
| A:8081A | LCSD 280-31388/3-A |     | 280-31865      | 280-31388  | 09/16/2010 16:17         | 1   | TAL DEN | CCL     |
| P:8151A | LCSD 280-31795/3-A |     | 280-32677      | 280-31795  | 09/16/2010 20:30         | 1   | TAL DEN | JCV     |
| A:8151A | LCSD 280-31795/3-A |     | 280-32677      | 280-31795  | 09/22/2010 15:48         | 1   | TAL DEN | MK      |

### Lab References:

TAL DEN = TestAmerica Denver

1505 11600 North Aptus Road  
105 Aragonite, UT 84029  
435.884.8100  
Fax 435.884.8877

**CleanHarbors**  
ENVIRONMENTAL SERVICES, INC.

## ANALYSIS REQUIRED

[illegible]

## Login Sample Receipt Check List

Client: Clean Harbors Environmental Services Inc

Job Number: 280-7326-1

Login Number: 7326

List Source: TestAmerica Denver

Creator: Bindel, Aaron M

List Number: 1

| Question   | T / F / NA | Comment         |
|--|------------|-----------------|
| Radioactivity either was not measured or, if measured, is at or below background | True       |                 |
| The cooler's custody seal, if present, is intact.                                | True       |                 |
| The cooler or samples do not appear to have been compromised or tampered with.   | True       |                 |
| Samples were received on ice.  | False      | BLUE ICE MELTED |
| Cooler Temperature is acceptable.  | False      | 17.0C           |
| Cooler Temperature is recorded.  | True       |                 |
| COC is present.  | True       |                 |
| COC is filled out in ink and legible.  | True       |                 |
| COC is filled out with all pertinent information.                                | True       |                 |
| Is the Field Sampler's name present on COC?                                      | True       |                 |
| There are no discrepancies between the sample IDs on the containers and the COC. | True       |                 |
| Samples are received within Holding Time.  | True       |                 |
| Sample containers have legible labels.   | True       |                 |
| Containers are not broken or leaking.  | True       |                 |
| Sample collection date/times are provided.                                       | True       |                 |
| Appropriate sample containers are used.  | True       |                 |
| Sample bottles are completely filled.  | True       |                 |
| Sample Preservation Verified   | True       |                 |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True       |                 |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | N/A        |                 |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True       |                 |
| Multiphasic samples are not present.   | True       |                 |
| Samples do not require splitting or compositing.                                 | True       |                 |



LIMS # 1009032

Document = HSWA

Date Received = 9/8/10 11:47

Group =

Fingerprint Completed =

Type =

Date Completed = 9/8/10 11:47

|    | Parameter           | Result | RL   | Sampled | Profile | Sample ID       |
|----|---------------------|--------|------|---------|---------|-----------------|
| 01 | Total Cyanide Waste | ND     | 29.0 |         | weekly  | SL100906-100912 |
| 02 | Total Cyanide Waste | ND     | 29.0 |         | weekly  | RD100906-100912 |

# Attachment 4

Aragonite

September 6-12, 2010 weekly slag and residue  
composites (dioxins/furans and carbamates)

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

September 24, 2010

**TestAmerica Project Number: G01140579**

PO/Contract:

Dave Lunt  
Clean Harbors  
11600 N. Aptus Road  
Aragonite, UT 84029

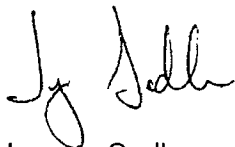
Dear Mr. Lunt,

This report contains the analytical results for the samples received under chain of custody by TestAmerica on September 14, 2010. These samples are associated with your HSWA-LDR project.

The test results in this report meet all NELAC requirements for parameters that accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916) 374-4381.

Sincerely,



Jeremy Sadler  
Project Manager

## Table of Contents

### TestAmerica West Sacramento Project Number G01140579

Case Narrative

Quality Assurance Program

Sample Description Information

Chain of Custody Documentation

SOLID, 8280A, Cl4-Cl8 Dioxins/Furans

Samples: 1, 2

Sample Data Sheets

Method Blank Report

Laboratory QC Reports

## **Case Narrative**

### **TestAmerica West Sacramento Project Number G0I140579**

#### **General Comments**

The samples were received in the laboratory at 14 degrees Celsius.

#### **SOLID, 8280A, Cl4-Cl8 Dioxins/Furans**

Samples: 1, 2

The laboratory control sample (LCS) associated with this extraction batch has recovery for 1,2,3,7,8-PeCDD above the established control limits indicating a high bias. As these samples are non-detect for this compound there is no adverse impact upon the data.

There were no other anomalies associated with this project.

## TestAmerica Laboratories West Sacramento Certifications/Accreditations

| Certifying State | Certificate # | Certifying State   | Certificate #    |
|------------------|---------------|--------------------|------------------|
| Alaska           | UST-055       | New York*          | 11666            |
| Arizona          | AZ0708        | Oregon*            | CA 200005        |
| Arkansas         | 88-0691       | Pennsylvania       | 68-1272          |
| California*      | 01119CA       | South Carolina     | 87014            |
| Colorado         | NA            | Texas              | T104704399-08-TX |
| Connecticut      | PH-0691       | Utah*              | QUANI            |
| Florida*         | E87570        | Virginia           | 00178            |
| Georgia          | 960           | Washington         | C1281            |
| Hawaii           | NA            | West Virginia      | 9930C, 334       |
| Illinois         | 200060        | Wisconsin          | 998204680        |
| Kansas*          | E-10375       | NFESC              | NA               |
| Louisiana*       | 306124        | USACE              | NA               |
| Michigan         | 9947          | USDA Foreign Plant | 37-82605         |
| Nevada           | CA44          | USDA Foreign Soil  | P330-09-00055    |
| New Jersey*      | CA005         | US Fish & Wildlife | LE148388-0       |
| New Mexico       | NA            | Guam               | 09-014r          |

\*NELAP accredited. A more detailed parameter list is available upon request. Updated 3/25/2009

## QC Parameter Definitions

**QC Batch:** The QC batch consists of a set of up to 20 field samples that behave similarly (i.e., same matrix) and are processed using the same procedures, reagents, and standards at the same time.

**Method Blank:** An analytical control consisting of all reagents, which may include internal standards and surrogates, and is carried through the entire analytical procedure. The method blank is used to define the level of laboratory background contamination.

**Laboratory Control Sample and Laboratory Control Sample Duplicate (LCS/LCSD):** An aliquot of blank matrix spiked with known amounts of representative target analytes. The LCS (and LCSD as required) is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects. If an LCSD is performed, it may also be used to evaluate the precision of the process.

**Duplicate Sample (DU):** Different aliquots of the same sample are analyzed to evaluate the precision of an analysis.

**Surrogates:** Organic compounds not expected to be detected in field samples, which behave similarly to target analytes. These are added to every sample within a batch at a known concentration to determine the efficiency of the sample preparation and analytical process.

**Matrix Spike and Matrix Spike Duplicate (MS/MSD):** An MS is an aliquot of a matrix fortified with known quantities of specific compounds and subjected to an entire analytical procedure in order to indicate the appropriateness of the method for a particular matrix. The percent recovery for the respective compound(s) is then calculated. The MSD is a second aliquot of the same matrix as the matrix spike, also spiked, in order to determine the precision of the method.

**Isotope Dilution:** For isotope dilution methods, isotopically labeled analogs (internal standards) of the native target analytes are spiked into the sample at time of extraction. These internal standards are used for quantitation, and monitor and correct for matrix effects. Since matrix effects on method performance can be judged by the recovery of these analogs, there is little added benefit of performing MS/MSD for these methods. MS/MSD are only performed for client or QAPP requirements.

**Control Limits:** The reported control limits are either based on laboratory historical data, method requirements, or project data quality objectives. The control limits represent the estimated uncertainty of the test results.

## Sample Summary

### TestAmerica West Sacramento Project Number G0I140579

| <u>WO#</u> | <u>Sample #</u> | <u>Client Sample ID</u> | <u>Sampling Date</u> | <u>Received Date</u> |
|------------|-----------------|-------------------------|----------------------|----------------------|
| L60PK      | 1               | SLAG-SL100906-100912    | 9/13/2010 10:30 AM   | 9/14/2010 09:00 AM   |
| L60PW      | 2               | RESIDUE RD100906-100912 | 9/13/2010 10:30 AM   | 9/14/2010 09:00 AM   |

#### Notes:

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity, pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.



# SAMPLES FOR LABORATORY WORKORDER FORM

11600 North Aptus Road  
Aragonite, UT 84029  
801.323.8100  
Fax 801.323.8877



## ANALYSIS REQUIRED

Department/Area:

NUMBER OF  
CONTAINER  
S

Sample ID

8280

| Sample # | Date Sampled | Time Sampled | Sample Description |
|----------|--------------|--------------|--------------------|
|----------|--------------|--------------|--------------------|

|   |           |       |      |
|---|-----------|-------|------|
| 1 | 9/13/2010 | 10:30 | Slag |
|---|-----------|-------|------|

1

SL100906-100912

x

|   |           |       |         |
|---|-----------|-------|---------|
| 2 | 9/13/2010 | 10:45 | Residue |
|---|-----------|-------|---------|

1

RD100906-100912

X

**TestAmerica West Sacramento (916) 373 - 5600**

Relinquished by:

9/13/2010

15:00

Received by:

NOTES:

54-17685 received @ 14°C 1/10/10



411111 THE LEADER IN ENVIRONMENTAL TESTING

LOT RECEIPT CHECKLIST  
TestAmerica West Sacramento

CLIENT CLOW WARRINGTON PM 35 LOG # 66985

LOT# (QUANTIMS ID) G01140579 QUOTE# 29223 LOCATION W26C

DATE RECEIVED 14 SEP10 TIME RECEIVED 0900

Checked (✓)

DELIVERED BY ☒ FEDEX ☐ ON TRAC ☐ CLIENT

☐ GOLDENSTATE ☐ UPS ☐ GO-GETTERS ☐ OTHER

☐ TAL COURIER ☐ TAL SF ☐ VALLEY LOGISTICS

CUSTODY SEAL STATUS ☒ INTACT ☐ BROKEN ☐ N/A

CUSTODY SEAL #(S) 1/2

SHIPPING CONTAINER(S) ☒ TAL ☐ CLIENT ☐ N/A

COC #(S) 1/2

TEMPERATURE BLANK Observed: 1/2 Corrected: 1/2

SAMPLE TEMPERATURE - (TEMPERATURES ARE IN °C)

Observed: 14, 14 Average 14 Corrected Average 14

LABORATORY THERMOMETER ID:

IR UNIT: #4 ☒ #5 ☐ ☐ OTHER

Initials [Signature] Date 14 SEP10

pH MEASURED ☐ YES ☐ ANOMALY ☒ N/A

LABELLED BY.....

LABELS CHECKED BY.....

PEER REVIEW ☒ NA

SHORT HOLD TEST NOTIFICATION

SAMPLE RECEIVING

WETCHEM ☒ N/A

VOA-ENCORES ☒ N/A

☐ METALS NOTIFIED OF FILTER/PRESERVE VIA VERBAL & EMAIL ☒ N/A

☐ COMPLETE SHIPMENT RECEIVED IN GOOD CONDITION WITH APPROPRIATE TEMPERATURES, CONTAINERS, PRESERVATIVES ☒ N/A

☒ CLOUSEAU ☐ TEMPERATURE EXCEEDED (2 °C - 6 °C)\*1 ☐ N/A

☐ WET ICE ☒ BLUE ICE ☐ GEL PACK ☐ NO COOLING AGENTS USED

☐ PM NOTIFIED

(14) THERMOMETER

Initials [Signature] Date 14 SEP10

Notes.....

\*1 Acceptable temperature range for State of Wisconsin samples is ≤4°C.

**Bottle Lot Inventory**

Lot

ID:

G01140579

|               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|
| VOA*          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| VOAh*         |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| AGB           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| AGBs          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250AGB        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250AGBs       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250AGBn       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500AGB        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| ___AGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500AGJ        | 1 | 1 |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250AGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 125AGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| ___CGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500CGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250CGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 125CGJ        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| PJ            |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| PJn           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500PJ         |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500PJn        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500PJna       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 500PJzn/na    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250PJ         |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250PJn        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250PJna       |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| 250PJzn/na    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Acetate Tube  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| ___"CT        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Encore        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Folder/filter |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| PUF           |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Petri/Filter  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| XAD Trap      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
| Ziploc        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |
|               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

h = hydrochloric acid    s = sulfuric acid    na = sodium hydroxide    n = nitric acid    zn = zinc acetate

Number of VOAs with air bubbles present / total number of VOA's

QA-185 5/05 EM

Page 3

LEAVE NO SPACES BLANK. USE "NA" IF NOT APPLICABLE.

G01140579

TestAmerica West Sacramento (916) 373 - 5600

8 of 15

SOLID, 8280A, Cl4-Cl8  
Dioxins/Furans

# Clean Harbors Aragonite

Client Sample ID: SIAG-SL100906-100912

## Trace Level Organic Compounds

Lot-Sample #....: G0I140579-001      Work Order #....: L60PK1AA      Matrix.....: SOLID  
 Date Sampled...: 09/13/10      Date Received...: 09/14/10  
 Prep Date.....: 09/17/10      Analysis Date...: 09/23/10  
 Prep Batch #....: 0260063  
 Dilution Factor: 1

| PARAMETER           | RESULT | DETECTION<br>LIMIT | UNITS | METHOD      |
|---------------------|--------|--------------------|-------|-------------|
| 2,3,7,8-TCDD        | ND     | 0.50               | ng/g  | SW846 8280A |
| Total TCDD          | ND     | 0.50               | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDD     | ND     | 1.2                | ng/g  | SW846 8280A |
| Total PeCDD         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HxCDD         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDD | 0.31 J | 1.2                | ng/g  | SW846 8280A |
| Total HpCDD         | 0.82   | 1.2                | ng/g  | SW846 8280A |
| OCDD                | 2.9    | 2.5                | ng/g  | SW846 8280A |
| 2,3,7,8-TCDF        | ND     | 0.50               | ng/g  | SW846 8280A |
| Total TCDF          | ND     | 0.50               | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDF     | ND     | 1.2                | ng/g  | SW846 8280A |
| 2,3,4,7,8-PeCDF     | ND     | 1.2                | ng/g  | SW846 8280A |
| Total PeCDF         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 2,3,4,6,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HxCDF         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDF | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8,9-HpCDF | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HpCDF         | 0.24   | 1.2                | ng/g  | SW846 8280A |
| OCDF                | 0.55 J | 2.5                | ng/g  | SW846 8280A |

| INTERNAL STANDARDS      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-------------------------|---------------------|--------------------|
| 13C-2,3,7,8-TCDD        | 65                  | (25 - 150)         |
| 13C-2,3,7,8-TCDF        | 72                  | (25 - 150)         |
| 13C-1,2,3,6,7,8-HxCDD   | 73                  | (25 - 150)         |
| 13C-1,2,3,4,6,7,8-HpCDF | 81                  | (25 - 150)         |
| 13C-OCDD                | 78                  | (25 - 150)         |

| SURROGATE          | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|--------------------|---------------------|--------------------|
| 37C14-2,3,7,8-TCDD | 70                  | (25 - 150)         |

### NOTE(S) :

J Estimated result. Result is less than the reporting limit.

## Clean Harbors Aragonite

Client Sample ID: RESIDUE RD100906-100912

## Trace Level Organic Compounds

Lot-Sample #....: G0I140579-002    Work Order #....: L60PW1AA    Matrix.....: SOLID  
 Date Sampled....: 09/13/10    Date Received...: 09/14/10  
 Prep Date.....: 09/17/10    Analysis Date...: 09/23/10  
 Prep Batch #....: 0260063  
 Dilution Factor: 2

| PARAMETER           | RESULT | DETECTION<br>LIMIT | UNITS | METHOD      |
|---------------------|--------|--------------------|-------|-------------|
| 2,3,7,8-TCDD        | ND     | 1.0                | ng/g  | SW846 8280A |
| Total TCDD          | ND     | 1.0                | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDD     | ND     | 2.5                | ng/g  | SW846 8280A |
| Total PeCDD         | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDD   | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDD   | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDD   | ND     | 2.5                | ng/g  | SW846 8280A |
| Total HxCDD         | 0.31 J | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDD | ND     | 2.5                | ng/g  | SW846 8280A |
| Total HpCDD         | ND     | 2.5                | ng/g  | SW846 8280A |
| OCDD                | ND     | 5.0                | ng/g  | SW846 8280A |
| 2,3,7,8-TCDF        | ND     | 1.0                | ng/g  | SW846 8280A |
| Total TCDF          | ND     | 1.0                | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDF     | ND     | 2.5                | ng/g  | SW846 8280A |
| 2,3,4,7,8-PeCDF     | ND     | 2.5                | ng/g  | SW846 8280A |
| Total PeCDF         | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDF   | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDF   | ND     | 2.5                | ng/g  | SW846 8280A |
| 2,3,4,6,7,8-HxCDF   | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDF   | ND     | 2.5                | ng/g  | SW846 8280A |
| Total HxCDF         | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDF | ND     | 2.5                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8,9-HpCDF | ND     | 2.5                | ng/g  | SW846 8280A |
| Total HpCDF         | ND     | 2.5                | ng/g  | SW846 8280A |
| OCDF                | ND     | 5.0                | ng/g  | SW846 8280A |

| INTERNAL STANDARDS      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-------------------------|---------------------|--------------------|
| 13C-2,3,7,8-TCDD        | 75                  | (25 - 150)         |
| 13C-2,3,7,8-TCDF        | 78                  | (25 - 150)         |
| 13C-1,2,3,6,7,8-HxCDD   | 77                  | (25 - 150)         |
| 13C-1,2,3,4,6,7,8-HpCDF | 83                  | (25 - 150)         |
| 13C-OCDD                | 83                  | (25 - 150)         |

| SURROGATE          | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|--------------------|---------------------|--------------------|
| 37C14-2,3,7,8-TCDD | 80                  | (25 - 150)         |

## NOTE(S) :

J Estimated result. Result is less than the reporting limit.

## QC DATA ASSOCIATION SUMMARY

G01140579

Sample Preparation and Analysis Control Numbers

| <u>SAMPLE#</u> | <u>MATRIX</u> | <u>ANALYTICAL<br/>METHOD</u> | <u>LEACH<br/>BATCH #</u> | <u>PREP<br/>BATCH #</u> | <u>MS RUN#</u> |
|----------------|---------------|------------------------------|--------------------------|-------------------------|----------------|
| 001            | SOLID         | SW846 8280A                  |                          | 0260063                 |                |
| 002            | SOLID         | SW846 8280A                  |                          | 0260063                 |                |



# METHOD BLANK REPORT

## Trace Level Organic Compounds

Client Lot #....: G01140579  
MB Lot-Sample #: G01170000-063

Work Order #....: L64KX1AA

Matrix.....: SOLID

Analysis Date...: 09/22/10  
Dilution Factor: 1

Prep Date.....: 09/17/10

Prep Batch #....: 0260063

| PARAMETER           | RESULT | DETECTION<br>LIMIT | UNITS | METHOD      |
|---------------------|--------|--------------------|-------|-------------|
| 2,3,7,8-TCDD        | ND     | 0.50               | ng/g  | SW846 8280A |
| Total TCDD          | ND     | 0.50               | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDD     | ND     | 1.2                | ng/g  | SW846 8280A |
| Total PeCDD         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDD   | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HxCDD         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDD | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HpCDD         | ND     | 1.2                | ng/g  | SW846 8280A |
| OCDD                | ND     | 2.5                | ng/g  | SW846 8280A |
| 2,3,7,8-TCDF        | ND     | 0.50               | ng/g  | SW846 8280A |
| Total TCDF          | ND     | 0.50               | ng/g  | SW846 8280A |
| 1,2,3,7,8-PeCDF     | ND     | 1.2                | ng/g  | SW846 8280A |
| 2,3,4,7,8-PeCDF     | ND     | 1.2                | ng/g  | SW846 8280A |
| Total PeCDF         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,6,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 2,3,4,6,7,8-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,7,8,9-HxCDF   | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HxCDF         | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDF | ND     | 1.2                | ng/g  | SW846 8280A |
| 1,2,3,4,7,8,9-HpCDF | ND     | 1.2                | ng/g  | SW846 8280A |
| Total HpCDF         | ND     | 1.2                | ng/g  | SW846 8280A |
| OCDF                | ND     | 2.5                | ng/g  | SW846 8280A |

| INTERNAL STANDARDS      | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-------------------------|---------------------|--------------------|
| 13C-2,3,7,8-TCDD        | 76                  | (25 - 150)         |
| 13C-2,3,7,8-TCDF        | 78                  | (25 - 150)         |
| 13C-1,2,3,6,7,8-HxCDD   | 74                  | (25 - 150)         |
| 13C-1,2,3,4,6,7,8-HpCDF | 80                  | (25 - 150)         |
| 13C-OCDD                | 79                  | (25 - 150)         |

| SURROGATE          | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|--------------------|---------------------|--------------------|
| 37C14-2,3,7,8-TCDD | 75                  | (25 - 150)         |

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

## Trace Level Organic Compounds

Client Lot #....: G01140579      Work Order #....: L64KX1AC      Matrix.....: SOLID  
 LCS Lot-Sample#: G01170000-063  
 Prep Date.....: 09/17/10      Analysis Date...: 09/22/10  
 Prep Batch #....: 0260063  
 Dilution Factor: 1

| PARAMETER           | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS | METHOD      |
|---------------------|---------------------|--------------------|-------------|
| 2,3,7,8-TCDD        | 118                 | (65 - 125)         | SW846 8280A |
| 1,2,3,7,8-PeCDD     | 130 a               | (65 - 125)         | SW846 8280A |
| 1,2,3,4,7,8-HxCDD   | 111                 | (64 - 124)         | SW846 8280A |
| 1,2,3,6,7,8-HxCDD   | 113                 | (65 - 125)         | SW846 8280A |
| 1,2,3,7,8,9-HxCDD   | 117                 | (67 - 127)         | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDD | 118                 | (66 - 126)         | SW846 8280A |
| OCDD                | 119                 | (66 - 126)         | SW846 8280A |
| 2,3,7,8-TCDF        | 116                 | (65 - 125)         | SW846 8280A |
| 1,2,3,7,8-PeCDF     | 124                 | (66 - 126)         | SW846 8280A |
| 2,3,4,7,8-PeCDF     | 125                 | (66 - 126)         | SW846 8280A |
| 1,2,3,4,7,8-HxCDF   | 115                 | (64 - 124)         | SW846 8280A |
| 1,2,3,6,7,8-HxCDF   | 112                 | (64 - 124)         | SW846 8280A |
| 2,3,4,6,7,8-HxCDF   | 113                 | (65 - 125)         | SW846 8280A |
| 1,2,3,7,8,9-HxCDF   | 114                 | (66 - 126)         | SW846 8280A |
| 1,2,3,4,6,7,8-HpCDF | 117                 | (65 - 125)         | SW846 8280A |
| 1,2,3,4,7,8,9-HpCDF | 120                 | (66 - 126)         | SW846 8280A |
| OCDF                | 117                 | (65 - 125)         | SW846 8280A |

| INTERNAL STANDARD       | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|-------------------------|---------------------|--------------------|
| 13C-2,3,7,8-TCDD        | 69                  | (25 - 150)         |
| 13C-2,3,7,8-TCDF        | 66                  | (25 - 150)         |
| 13C-1,2,3,6,7,8-HxCDD   | 69                  | (25 - 150)         |
| 13C-1,2,3,4,6,7,8-HpCDF | 68                  | (25 - 150)         |
| 13C-OCDD                | 71                  | (25 - 150)         |

| SURROGATE          | PERCENT<br>RECOVERY | RECOVERY<br>LIMITS |
|--------------------|---------------------|--------------------|
| 37C14-2,3,7,8-TCDD | 78                  | (25 - 150)         |

### NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

**LABORATORY CONTROL SAMPLE DATA REPORT**

**Trace Level Organic Compounds**

Client Lot #....: G0I140579      Work Order #....: L64KX1AC      Matrix.....: SOLID  
 LCS Lot-Sample#: G0I170000-063  
 Prep Date.....: 09/17/10      Analysis Date...: 09/22/10  
 Prep Batch #....: 0260063  
 Dilution Factor: 1

| <u>PARAMETER</u>    | <u>SPIKE<br/>AMOUNT</u> | <u>MEASURED<br/>AMOUNT</u> | <u>UNITS</u> | <u>PERCENT<br/>RECOVERY</u> | <u>METHOD</u> |
|---------------------|-------------------------|----------------------------|--------------|-----------------------------|---------------|
| 2,3,7,8-TCDD        | 2.50                    | 2.95                       | ng/g         | 118                         | SW846 8280A   |
| 1,2,3,7,8-PeCDD     | 6.25                    | 8.12 a                     | ng/g         | 130                         | SW846 8280A   |
| 1,2,3,4,7,8-HxCDD   | 6.25                    | 6.96                       | ng/g         | 111                         | SW846 8280A   |
| 1,2,3,6,7,8-HxCDD   | 6.25                    | 7.07                       | ng/g         | 113                         | SW846 8280A   |
| 1,2,3,7,8,9-HxCDD   | 6.25                    | 7.31                       | ng/g         | 117                         | SW846 8280A   |
| 1,2,3,4,6,7,8-HpCDD | 6.25                    | 7.36                       | ng/g         | 118                         | SW846 8280A   |
| OCDD                | 12.5                    | 14.9                       | ng/g         | 119                         | SW846 8280A   |
| 2,3,7,8-TCDF        | 2.50                    | 2.90                       | ng/g         | 116                         | SW846 8280A   |
| 1,2,3,7,8-PeCDF     | 6.25                    | 7.74                       | ng/g         | 124                         | SW846 8280A   |
| 2,3,4,7,8-PeCDF     | 6.25                    | 7.83                       | ng/g         | 125                         | SW846 8280A   |
| 1,2,3,4,7,8-HxCDF   | 6.25                    | 7.22                       | ng/g         | 115                         | SW846 8280A   |
| 1,2,3,6,7,8-HxCDF   | 6.25                    | 7.01                       | ng/g         | 112                         | SW846 8280A   |
| 2,3,4,6,7,8-HxCDF   | 6.25                    | 7.08                       | ng/g         | 113                         | SW846 8280A   |
| 1,2,3,7,8,9-HxCDF   | 6.25                    | 7.15                       | ng/g         | 114                         | SW846 8280A   |
| 1,2,3,4,6,7,8-HpCDF | 6.25                    | 7.33                       | ng/g         | 117                         | SW846 8280A   |
| 1,2,3,4,7,8,9-HpCDF | 6.25                    | 7.53                       | ng/g         | 120                         | SW846 8280A   |
| OCDF                | 12.5                    | 14.7                       | ng/g         | 117                         | SW846 8280A   |

| <u>INTERNAL STANDARD</u> | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|--------------------------|-----------------------------|----------------------------|
| 13C-2,3,7,8-TCDD         | 69                          | (25 - 150)                 |
| 13C-2,3,7,8-TCDF         | 66                          | (25 - 150)                 |
| 13C-1,2,3,6,7,8-HxCDD    | 69                          | (25 - 150)                 |
| 13C-1,2,3,4,6,7,8-HpCDF  | 68                          | (25 - 150)                 |
| 13C-OCDD                 | 71                          | (25 - 150)                 |

| <u>SURROGATE</u>   | <u>PERCENT<br/>RECOVERY</u> | <u>RECOVERY<br/>LIMITS</u> |
|--------------------|-----------------------------|----------------------------|
| 37C14-2,3,7,8-TCDD | 78                          | (25 - 150)                 |

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.



908 North Temperance Ave. ▼ Clovis, CA 93611 ▼ Phone 559.275-2175 ▼ Fax 559.275-4422

NELAP Certification number: 05233CA (HW)

September 22, 2010

Clean Harbors  
11600 North Aptus Road  
Aragonite, Utah 84029

Attn: Dave Lunt

Subject: Report of Data: Case 62460

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Mr. Lunt:

Two miscellaneous samples were received September 14, 2010. Written results are being provided on this September 22, 2010, for the requested analyses. All holding times were met.

For the EPA 8321A UTS Carbamate analysis, the samples were extracted according to EPA method 3550B.

For the Thiophanate-Methyl and Physostigmine/Phys. Salic. analysis, the samples were extracted according to APPL SOP SON002T and analyzed according to the EPA method 8321A. The Isoxaben surrogate recovered below the 57% control limit for sample RD100906-1009126 at 43.8%. The sample was re-injected with similar results. All other surrogate recoveries were acceptable.

The Ziram analysis was subcontracted to North Coast Laboratories. Their results are attached.

No other unusual problems or complications were encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Leonard Fong, Ph.D, Laboratory Director  
APPL, Inc.

LF/cm  
Enclosure  
cc: File

Number of pages in this report: 16

## EPA 8321 UTS Carbamates

Clean Harbors  
11600 North Aptus Road  
Aragonite, Utah 84029

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

Attn: Dave Lunt

ARF: 62460

Sample ID: SLAG SL100906-100912

APPL ID: AY21274

Sample Collection Date: 9/13/2010

QCG: #8321A-100916A-146904

| Method   | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|----------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| EPA 8321 | Aldicarb_sulfone              | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Barban                        | Not detected | 500    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Bendlocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Benomyl/Carbendazim           | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Butylate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbaryl                      | Not detected | 20     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbofuran                    | Not detected | 20     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbofuran-phenol             | Not detected | 500    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbosulfan                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Eptam                         | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Formetanate-HCL               | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Methlocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Methomyl                      | Not detected | 70     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Metolcarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Mexacarbate                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Molinate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Oxamyl                        | Not detected | 100    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Pebulate/Vernolate            | Not detected | 400    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Promecarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Propham                       | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Propoxur                      | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Prosulfocarb                  | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Thiodicarb                    | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Triallate                     | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Surrogate: Isoxaben           | 103          | 38-145 | %     | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Surrogate: Tributyl_phosphate | 105          | 34-146 | %     | 9/16/2010       | 9/20/2010     |

Quant Method: 832UP919.M  
Run #: >L919\_030.D  
Instrument: AGIL\_1100  
Sequence: LQ091910  
Dilution Factor: 1  
Initials: MP

Printed: 9/21/2010 10:28:39 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8321A UTS Special

Clean Harbors  
11600 North Aptus Road  
Aragonite, Utah 84029

Attn: Dave Lunt

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

Sample ID: SLAG SL100906-100912

Sample Collection Date: 9/13/2010

ARF: 62460

APPL ID: AY21274

QCG: #83TS-100916A-146854

| Method    | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|-----------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| EPA 8321A | Physostigmine/Phys.Salic      | Not detected | 300    | ug/kg | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Thiophanate-methyl            | Not detected | 500    | ug/kg | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Surrogate: Isoxaben           | 67.2         | 57-119 | %     | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Surrogate: Tributyl_phosphate | 96.1         | 57-114 | %     | 9/16/2010       | 9/17/2010     |

Quant Method: QTLMFL2  
Run #: >LW0916\_23  
Instrument: LCQ  
Sequence: LW091610  
Dilution Factor: 1  
Initials: MP

Printed: 9/20/2010 8:45:37 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8321 UTS Carbamates

Clean Harbors  
11600 North Aptus Road  
Aragonite, Utah 84029

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

Attn: Dave Lunt

ARF: 62460

Sample ID: RESIDUE RD100906-1009126

APPL ID: AY21275

Sample Collection Date: 9/13/2010

QCG: #8321A-100916A-146904

| Method   | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|----------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| EPA 8321 | Aldicarb_sulfone              | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Barban                        | Not detected | 500    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Bendiocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Benomyl/Carbendazim           | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Butylate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbaryl                      | Not detected | 20     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbofuran                    | Not detected | 20     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbofuran-phenol             | Not detected | 500    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Carbosulfan                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Eptam                         | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Formetanate-HCL               | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Methiocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Methomyl                      | Not detected | 70     | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Metolcarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Mexacarbate                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Molinate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Oxamyl                        | Not detected | 100    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Pebulate/Vernolate            | Not detected | 400    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Promecarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Propham                       | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Propoxur                      | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Prosulfocarb                  | Not detected | 200    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Thiodicarb                    | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Triallate                     | Not detected | 300    | ug/kg | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Surrogate: Isoxaben           | 81.0         | 38-145 | %     | 9/16/2010       | 9/20/2010     |
| EPA 8321 | Surrogate: Tributyl_phosphate | 82.0         | 34-148 | %     | 9/16/2010       | 9/20/2010     |

Quant Method: 832UP919.M  
Run #: >L919\_031.D  
Instrument: AGIL\_1100  
Sequence: LQ091910  
Dilution Factor: 1  
Initials: MP

Printed: 9/21/2010 10:28:39 AM  
Form 1 - APPL Standard GC - No MC



## EPA 8321A UTS Special

Clean Harbors  
11600 North Aptus Road  
Aragonite, Utah 84029

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

Attn: Dave Lunt

ARF: 62460

Sample ID: RESIDUE RD100906-1009126

APPL ID: AY21275

Sample Collection Date: 9/13/2010

QCG: #83TS-100916A-146854

| Method    | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|-----------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| EPA 8321A | Physostigmine/Phys.Salic      | Not detected | 300    | ug/kg | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Thiophanate-methyl            | Not detected | 500    | ug/kg | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Surrogate: Isoxaben           | 53.8 #       | 57-119 | %     | 9/16/2010       | 9/17/2010     |
| EPA 8321A | Surrogate: Tributyl_phosphate | 87.3         | 57-114 | %     | 9/16/2010       | 9/17/2010     |

# = Recovery (or RPD) is outside QC limits.

Quant Method: QTLML2  
Run #: >LW0917\_30  
Instrument: LCQ  
Sequence: LW091710  
Dilution Factor: 1  
Initials: MP

Printed: 9/20/2010 8:45:38 AM  
Form 1 - APPL Standard GC - No MC

# **Method Blank** **EPA 8321 UTS Carbamates**

Blank Name/QCG: 100916S-21274 - 146904  
 Batch ID: #8321A-100916A

APPL Inc.  
 908 North Temperance Avenue  
 Clovis, CA 93611

| Sample Type | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|-------------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| BLANK       | Aldicarb_sulfone              | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Barban                        | Not detected | 500    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Bendiocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Benomyl/Carbendazim           | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Butylate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Carbaryl                      | Not detected | 20     | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Carbofuran                    | Not detected | 20     | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Carbofuran-phenol             | Not detected | 500    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Carbosulfan                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Eptam                         | Not detected | 300    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Formetanate-HCL               | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Methlocarb                    | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Methomyl                      | Not detected | 70     | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Metolcarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Mexacarbate                   | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Molinate                      | Not detected | 300    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Oxamyl                        | Not detected | 100    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Pebulate/Vernolate            | Not detected | 400    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Promecarb                     | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Propham                       | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Propoxur                      | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Prosulfocarb                  | Not detected | 200    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Thiodicarb                    | Not detected | 300    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Triallate                     | Not detected | 300    | ug/kg | 9/16/2010       | 9/19/2010     |
| BLANK       | Surrogate: Isoxaben           | 93.6         | 38-145 | %     | 9/16/2010       | 9/19/2010     |
| BLANK       | Surrogate: Tributyl_phosphate | 89.8         | 34-146 | %     | 9/16/2010       | 9/19/2010     |

Quant Method: 832UP919.M  
 Run #: >L919\_024.D  
 Instrument: AGIL\_1100  
 Sequence: LQ091910  
 Initials: MP

**Method Blank**  
**EPA 8321A UTS Special**

Blank Name/QCG: 100916S-21274 - 146854  
Batch ID: #83TS-100916A

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

| Sample Type | Analyte                       | Result       | PQL    | Units | Extraction Date | Analysis Date |
|-------------|-------------------------------|--------------|--------|-------|-----------------|---------------|
| BLANK       | Physostigmine/Phys.Salic      | Not detected | 300    | ug/kg | 9/16/2010       | 9/17/2010     |
| BLANK       | Thiophanate-methyl            | Not detected | 500    | ug/kg | 9/16/2010       | 9/17/2010     |
| BLANK       | Surrogate: Isoxaben           | 74.8         | 57-119 | %     | 9/16/2010       | 9/17/2010     |
| BLANK       | Surrogate: Tributyl_phosphate | 86.7         | 57-114 | %     | 9/16/2010       | 9/17/2010     |

Quant Method: QTLMFL2  
Run #: >LW0916\_20  
Instrument: LCQ  
Sequence: LW091610  
Initials: MP

Printed: 9/20/2010 8:45:33 AM

# Laboratory Control Spike Recovery

## EPA 8321 UTS Carbamates

APPL ID: 100916S-21274 LCS - 146904  
Batch ID: #8321A-100916A

APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

| Compound Name                 | Spike Level<br>ug/kg | SPK Result<br>ug/kg | SPK %<br>Recovery | Recovery<br>Limits |
|-------------------------------|----------------------|---------------------|-------------------|--------------------|
| Aldicarb_sulfone              | 200                  | 161                 | 80.5              | 54-129             |
| Barban                        | 1000                 | 967                 | 96.7              | 58-140             |
| Bendlocarb                    | 200                  | 197                 | 98.5              | 49-141             |
| Benomyl/Carbendazim           | 200                  | 139                 | 69.5              | 18-90              |
| Butylate                      | 200                  | 138                 | 69.0              | 31-103             |
| Carbaryl                      | 200                  | 190                 | 95.0              | 31-191             |
| Carbofuran                    | 200                  | 163                 | 81.5              | 55-158             |
| Carbofuran-phenol             | 400                  | 427                 | 107               | 30-111             |
| Carbosulfan                   | 200                  | 104                 | 52.0              | 41-198             |
| Eptam                         | 200                  | 130                 | 65.0              | 35-106             |
| Formetanate-HCL               | 200                  | 94.8                | 47.4              | 12-122             |
| Methiocarb                    | 200                  | 181                 | 90.5              | 49-125             |
| Methomyl                      | 200                  | 141                 | 70.5              | 59-127             |
| Metolcarb                     | 200                  | 163                 | 81.5              | 43-139             |
| Mexacarbate                   | 400                  | 385                 | 96.3              | 51-121             |
| Molinate                      | 200                  | 145                 | 72.5              | 57-96              |
| Oxamyl                        | 200                  | 151                 | 75.5              | 24-153             |
| Pebulate/Vernolate            | 400                  | 287                 | 71.8              | 48-94              |
| Promecarb                     | 200                  | 163                 | 81.5              | 54-113             |
| Propham                       | 400                  | 331                 | 82.8              | 54-114             |
| Propoxur                      | 200                  | 166                 | 83.0              | 67-122             |
| Prosulfocarb                  | 200                  | 150                 | 75.0              | 50-122             |
| Thiodicarb                    | 200                  | 159                 | 79.5              | 60-128             |
| Triallate                     | 200                  | 146                 | 73.0              | 41-113             |
| Surrogate: Isoxaben           | 66.7                 | 62.9                | 94.3              | 38-145             |
| Surrogate: Tributyl_phosphate | 66.7                 | 62.2                | 93.3              | 34-146             |

Comments:

| Primary           | SPK         |
|-------------------|-------------|
| Quant Method :    | 832UP919.M  |
| Extraction Date : | 9/16/2010   |
| Analysis Date :   | 9/19/2010   |
| Instrument :      | AGIL_1100   |
| Run :             | >L919_019.D |
| Initials :        | MP          |

Printed: 9/21/2010 10:28:32 AM

APPL Standard LCS

**Laboratory Control Spike Recovery**  
**EPA 8321A UTS Special**

APPL ID: 100916S-21274 LCS - 146854  
Batch ID: #83TS-100916A

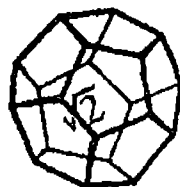
APPL Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

| Compound Name                 | Spike Level<br>ug/kg | SPK Result<br>ug/kg | SPK %<br>Recovery | Recovery<br>Limits |
|-------------------------------|----------------------|---------------------|-------------------|--------------------|
| Physostigmine/Phys.Salic      | 2000                 | 624                 | 31.2              | 10-102             |
| Thiophanate-methyl            | 1000                 | 1110                | 111               | 33-137             |
| Surrogate: Isoxaben           | 1000                 | 574                 | 57.4              | 57-119             |
| Surrogate: Tributyl_phosphate | 1000                 | 688                 | 68.8              | 57-114             |

Comments: \_\_\_\_\_

| Primary           | SPK        |
|-------------------|------------|
| Quant Method :    | QTLMFL2    |
| Extraction Date : | 9/16/2010  |
| Analysis Date :   | 9/16/2010  |
| Instrument :      | LCQ        |
| Run :             | >LW0916_18 |
| Initials :        | MP         |

Printed: 9/20/2010 8:45:30 AM  
APPL Standard LCS



**NORTH COAST  
LABORATORIES LTD.**

September 17, 2010

APPL, Inc.  
908 North Temperance Avenue  
Clovis, CA 93611

Attn: Cynthia Clark

RE: 62460

Order No.: 1009256

Invoice No.: 92052

PO No.: 00-62460

BLAP No.1247-Expires July 2012

**SAMPLE IDENTIFICATION**

| Fraction | Client Sample Description |
|----------|---------------------------|
| 01A      | SL100906-100912 SLAG      |
| 02A      | RD100906-1009126 RESIDUE  |


ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

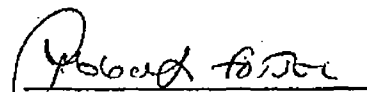
Flag = Explanation in Case Narrative

All solid results are expressed on a wet-weight basis unless otherwise noted.

**REPORT CERTIFIED BY**

  
Laboratory Supervisor(s)

  
QA Unit

  
Jesse G. Chaney, Jr.  
Laboratory Director

**North Coast Laboratories, Ltd.**

**Date: 17-Sep-2010**

**CLIENT:** APPL, Inc.  
**Project:** 62460  
**Lab Order:** 1009256

**CASE NARRATIVE**

EPA 630:  
Individual dithiocarbamate chemicals are not differentiated by EPA 630. Results are expressed as Ziram.

Date: 17-Sep-2010  
WorkOrder: 1009256

## ANALYTICAL REPORT

Client Sample ID: SL100906-100912 SLAG  
Lab ID: 1009256-01A

Received: 9/15/2010 Collected: 9/13/2010 10:30

Test Name: Dithiocarbamates as Ziram

Reference: EPA 630 Modified

| <u>Parameter</u> | <u>Result</u> | <u>Flag</u> | <u>Limit</u> | <u>Units</u> | <u>DF</u> | <u>Extracted</u> | <u>Analyzed</u> |
|------------------|---------------|-------------|--------------|--------------|-----------|------------------|-----------------|
| Ziram            | ND            |             | 0.50         | mg/kg        | 1.0       | 9/16/2010        | 9/16/2010       |

Client Sample ID: RD100906-1009126 RESIDUE  
Lab ID: 1009256-02A

Received: 9/15/2010 Collected: 9/13/2010 10:45

Test Name: Dithiocarbamates as Ziram

Reference: EPA 630 Modified

| <u>Parameter</u> | <u>Result</u> | <u>Flag</u> | <u>Limit</u> | <u>Units</u> | <u>DF</u> | <u>Extracted</u> | <u>Analyzed</u> |
|------------------|---------------|-------------|--------------|--------------|-----------|------------------|-----------------|
| Ziram            | 0.94          |             | 0.50         | mg/kg        | 1.0       | 9/16/2010        | 9/16/2010       |



North Coast Laboratories, Ltd.

Date: 9/17/2010

CLIENT: APPL, Inc.  
Work Order: 1009256  
Project: 62460

## QC SUMMARY REPORT

Method Blank

|                 |                  |                    |              |                          |                      |          |           |             |      |          |      |
|-----------------|------------------|--------------------|--------------|--------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: MBLK | Batch ID: R63146 | Test Code: 630S    | Units: mg/kg | Analysis Date: 9/16/2010 | Prep Date: 9/16/2010 |          |           |             |      |          |      |
| Client ID:      |                  | Run ID: WC_100916C |              | SeqNo: 919598            |                      |          |           |             |      |          |      |
| Analyte         | Result           | Limit              | SPK value    | SPK Ref Val              | % Rec                | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Ziram           | ND               | 0.50               |              |                          |                      |          |           |             |      |          |      |

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 9/17/2010

CLIENT: APPL, Inc.  
Work Order: 1009256  
Project: 62460

## QC SUMMARY REPORT

Laboratory Control Spike

|                         |                    |                 |              |                          |                      |          |           |             |      |          |      |
|-------------------------|--------------------|-----------------|--------------|--------------------------|----------------------|----------|-----------|-------------|------|----------|------|
| Sample ID: LCS 09161009 | Batch ID: R63146   | Test Code: 630S | Units: mg/kg | Analysis Date: 9/16/2010 | Prep Date: 9/16/2010 |          |           |             |      |          |      |
| Client ID:              | Run ID: WC_100916C | SeqNo: 919599   |              |                          |                      |          |           |             |      |          |      |
| Analyte                 | Result             | Limit           | SPK value    | SPK Ref Val              | % Rec                | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Ziram                   | 1.569              | 0.50            | 1.50         | 0                        | 105%                 | 91       | 111       | 0           |      |          |      |

|                          |                    |                 |              |                          |                      |          |           |             |        |          |      |
|--------------------------|--------------------|-----------------|--------------|--------------------------|----------------------|----------|-----------|-------------|--------|----------|------|
| Sample ID: LCSD 09161010 | Batch ID: R63146   | Test Code: 630S | Units: mg/kg | Analysis Date: 9/16/2010 | Prep Date: 9/16/2010 |          |           |             |        |          |      |
| Client ID:               | Run ID: WC_100916C | SeqNo: 919600   |              |                          |                      |          |           |             |        |          |      |
| Analyte                  | Result             | Limit           | SPK value    | SPK Ref Val              | % Rec                | LowLimit | HighLimit | RPD Ref Val | %RPD   | RPDLimit | Qual |
| Ziram                    | 1.555              | 0.50            | 1.50         | 0                        | 104%                 | 91       | 111       | 1.57        | 0.915% | 10       |      |

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantization limits

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

**SUBCONTRACT ORDER**  
**APPL, Inc.**

**ARF: 62460**

**PO: 00-62460**

**SENDING LABORATORY:**


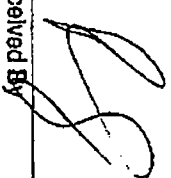
APPL Labs  
808 North Temperance Ave.  
Clovis, CA 93811  
Phone: (559) 275-2175  
Fax: (559) 275-4422  
Project Manager: Cynthia Clark (cc Clark@applinc.com) hp

**RECEIVING LABORATORY:**

North Coast  
5880 West End Road  
Arcata, CA 95521  
Phone: (707) 822-4649x  
Fax: (707) 822-6831

Comments: STD TAT, STD REPORT, Please email report to Renee Patterson-rpatterson@applinc.com

| APPL ID | Sample ID | LOC ID           | Matrix | Collected      | Analysis               |
|---------|-----------|------------------|--------|----------------|------------------------|
| 1.      | AY21274   | SL100906-100912  | Misc.  | 09/13/10 10:30 | TOTAL DITHIOCARBAMATES |
|         |           | SLAG             |        |                |                        |
| 2.      | AY21275   | RD100906-1009126 | Misc.  | 09/13/10 10:45 | TOTAL DITHIOCARBAMATES |
|         |           | RESIDUE          |        |                |                        |

|             |   |      |         |      |       |             |  |      |         |      |      |
|-------------|---|------|---------|------|-------|-------------|--|------|---------|------|------|
| Released By |  | Date | 9/14/10 | Time | 13:06 | Received By |  | Date | 9/15/10 | Time | 1147 |
|             |   | Date |         | Time |       |             |  | Date | 3.22C   | Time |      |

|             |      |      |             |      |      |
|-------------|------|------|-------------|------|------|
| Released By | Date | Time | Received By | Date | Time |
|-------------|------|------|-------------|------|------|

**To ensure timely payment, please include the PO number on your invoice**

Printed: 09/14/10 12:28:37 PM

SUB\_ID: 3378

Page 1 of 1

11600 North Aptus Road  
Aragonite, UT 84029  
435-884-8181  
Fax 435-884-8877



## ANALYSIS REQUIRED

Department/Area:

**NUMBER OF  
CONTAINER  
\$**

**Sample ID**

8321 Total Dithiocarbamate

[illegible]

Relinquished by:

9/13/2010

15:00

Received by:

0710

9/14/12

NOTES: Need full carbamate list from our earlier project

② 10/10

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 5

Unified State Lab  
September 11, 2010 daily slag composite

UTAH STATE DEPARTMENT OF HEALTH  
DIVISION OF LABORATORY SERVICES  
Environmental Chemistry Analysis Report

UDEQ - DSHW  
ATTN:  
PO BOX 144880  
SALT LAKE CITY

UT 84114-4880

801-538-6170

Lab Number: 201005031 Sample Type: 50 Cost Code: 365  
Description: WEEKLY SLAG COMPOSITE SL100913D  
Collector: RP

Site ID: Source No: 00 Organic Review:  
Sample Date: 09/13/2010 Time: 08:44 Inorganic Review: 09/21/2010  
Radiochemistry Review: 09/29/2010  
Microbiology Review:

TEST RESULTS:

|            |            |            |             |
|------------|------------|------------|-------------|
| AntimonyHW | <0.01 mg/l | Arsenic HW | 0.34 mg/l   |
| Barium HW  | 0.42 mg/l  | Berylli HW | <0.005 mg/l |
| Cadmium HW | 0.01 mg/l  | ChromiumHW | 0.04 mg/l   |
| Lead HW    | 0.01 mg/l  | Mercury HW | <0.2 mg/l   |
| Nickel HW  | 2.26 mg/l  | SeleniumHW | <0.01 mg/l  |
| Silver HW  | 0.05 mg/l  | ThalliumHW | <0.01 mg/l  |
| VanadiumHW | 0.05 mg/l  | Zinc HW    | 0.235 mg/l  |

QUALIFYING COMMENTS (\*) on test results: NO COMMENTS

END OF REPORT

Cost Code: 365

EPA METHOD ~~600~~ **8082**

Lab # 201005031

PCB's and Organochlorine Pesticides

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201008:44

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY SLAG COMPOSITE SL100913D

Analyst: DK Date Received: 09/13/2010 Date Analyzed: 9/16/10

Aliquot Sample Extracted: 30g Final Volume Extract: 10ml  
(MDL based on 1 L extraction and 10 ml final volume).

| Compound            | MRL/Results ug/kg |       |
|---------------------|-------------------|-------|
| Aldrin              | 8.3               | U     |
| alpha-BHC           | 8.3               | U     |
| beta-BHC            | 8.3               | U     |
| delta-BHC           | 8.3               | U     |
| gamma-BHC (Lindane) | 8.3               | U     |
| Chlordane           | 166.0             | U     |
| 4,4'-DDD            | 8.3               | U     |
| 4,4'-DDE            | 8.3               | U     |
| 4,4'-DDT            | 8.3               | U     |
| Dieldrin            | 8.3               | U     |
| Endosulfan I        | 8.3               | U     |
| Endosulfan II       | 8.3               | U     |
| Endosulfan sulfate  | 8.3               | U     |
| Endrin              | 8.3               | U     |
| Endrin aldehyde     | 8.3               | U     |
| Heptachlor          | 8.3               | U     |
| Heptachlor epoxide  | 8.3               | U     |
| Toxaphene           | 332.0             | U     |
| Methoxychlor        | 8.3               | U     |
| PCB-1016            | 83.0              | U     |
| PCB-1221            | 166.0             | U     |
| PCB-1232            | 166.0             | U     |
| PCB-1242            | 166.0             | U     |
| PCB-1248            | 166.0             | U     |
| PCB-1254            | 166.0             | U     |
| PCB-1260            | 83.0              | 112.0 |

U - Analyzed for but not detected.

J - A value less than the detection limit  
but greater than zero.

B - Found in the blank.

Analysis Certified By: L. Oman

Date: 22 Sept 10

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 6

Unified State Lab  
September 11, 2010 daily residue composite



UTAH STATE DEPARTMENT OF HEALTH  
DIVISION OF LABORATORY SERVICES  
Environmental Chemistry Analysis Report

UDEQ - DSHW  
ATTN:  
PO BOX 144880  
SALT LAKE CITY

UT 84114-4880

801-538-6170

Lab Number: 201005032 Sample Type: 50 Cost Code: 365  
Description: WEEKLY RESIDUE COMPOSITE RD100913D  
Collector: RP

Site ID: Source No: 00 | Organic Review:  
Sample Date: 09/13/2010 Time: 08:44 | Inorganic Review: 09/21/2010  
Radiochemistry Review: 09/29/2010  
Microbiology Review:

TEST RESULTS:

|            |            |            |            |
|------------|------------|------------|------------|
| AntimonyHW | 0.858 mg/l | Arsenic HW | 0.96 mg/l  |
| Barium HW  | 0.45 mg/l  | Berylli HW | <0.05 mg/l |
| Cadmium HW | 2.49 mg/l  | ChromiumHW | 0.23 mg/l  |
| Lead HW    | 4.88 mg/l  | Mercury HW | <0.2 mg/l  |
| Nickel HW  | <0.05 mg/l | SeleniumHW | <0.1 mg/l  |
| Silver HW  | 0.1 mg/l   | ThalliumHW | <0.1 mg/l  |
| VanadiumHW | 0.5 mg/l   | Zinc HW    | 35.9 mg/l  |

QUALIFYING COMMENTS (\*) on test results: NO COMMENTS

END OF REPORT

Cost Code: 365

EPA METHOD ~~608~~ 8082

Lab # 201005032

PCB's and Organochlorine Pesticides

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201008:44

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY RESIDUE COMPOSITE RD100913D

Analyst: DP

Date Received: 09/13/2010

Date Analyzed: 9/16/10

Aliquot Sample Extracted: 30g

Final Volume Extract: 10ml

(MDL based on 1 L extraction and 10 ml final volume).

| Compound            | MRL/Results ug/kg |   |
|---------------------|-------------------|---|
| Aldrin              | 8.3               | U |
| alpha-BHC           | 8.3               | U |
| beta-BHC            | 8.3               | U |
| delta-BHC           | 8.3               | U |
| gamma-BHC (Lindane) | 8.3               | U |
| Chlordane           | 166.0             | U |
| 4,4'-DDD            | 8.3               | U |
| 4,4'-DDE            | 8.3               | U |
| 4,4'-DDT            | 8.3               | U |
| Dieldrin            | 8.3               | U |
| Endosulfan I        | 8.3               | U |
| Endosulfan II       | 8.3               | U |
| Endosulfan sulfate  | 8.3               | U |
| Endrin              | 8.3               | U |
| Endrin aldehyde     | 8.3               | U |
| Heptachlor          | 8.3               | U |
| Heptachlor epoxide  | 8.3               | U |
| Toxaphene           | 332.0             | U |
| Methoxychlor        | 8.3               | U |
| PCB-1016            | 83.0              | U |
| PCB-1221            | 166.0             | U |
| PCB-1232            | 166.0             | U |
| PCB-1242            | 166.0             | U |
| PCB-1248            | 166.0             | U |
| PCB-1254            | 166.0             | U |
| PCB-1260            | 83.0              | U |

U - Analyzed for but not detected.

J - A value less than the detection limit  
but greater than zero.

B - Found in the blank.

Analysis Certified By: J. Oman

Date: 22 Sept 10

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 7

Unified State Lab  
September 6-12, 2010 weekly slag composite

Cost Code: 365

EPA METHOD 8260B/624 GC/MS

Lab #: 201005029

Purgeables

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:03Sample Matrix: Soil/SolidCollected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY SLAG COMPOSITE SL100913WAnalyst: Alia RamiDate Received: 09/13/2010Date Analyzed: 09/15/10

|                             | MRL  | Results |                           | MRL  | Results |
|-----------------------------|------|---------|---------------------------|------|---------|
|                             |      | ug/kg   |                           |      | ug/kg   |
| Benzene                     | 50.0 | U       | Chloroform                | 50.0 | U       |
| Carbon Tetrachloride        | 50.0 | U       | Bromodichloromethane      | 50.0 | U       |
| 1,2-Dichloroethane          | 50.0 | U       | Chlorodibromomethane      | 50.0 | U       |
| 1,1-Dichloroethylene        | 50.0 | U       | Bromoform                 | 50.0 | U       |
| Para-Dichlorobenzene        | 50.0 | U       | m-Dichlorobenzene         | 50.0 | U       |
| 1,1,1-Trichloroethane       | 50.0 | U       | 1,1-Dichloropropene       | 50.0 | U       |
| Trichloroethylene           | 50.0 | U       | 1,1-Dichloroethane        | 50.0 | U       |
| Vinyl Chloride              | 50.0 | U       | 1,1,2,2-Tetrachloroethane | 50.0 | U       |
| o-Dichlorobenzene           | 50.0 | U       | 1,3-Dichloropropane       | 50.0 | U       |
| cis 1,2-Dichloroethylene    | 50.0 | U       | Chloromethane             | 50.0 | B147.0  |
| trans 1,2-Dichloroethylene  | 50.0 | U       | Bromomethane              | 50.0 | B480.0  |
| 1,2-Dichloropropane         | 50.0 | U       | 1,2,3-Trichloropropane    | 50.0 | U       |
| Ethylbenzene                | 50.0 | U       | 1,1,1,2-Tetrachloroethane | 50.0 | U       |
| Monochlorobenzene           | 50.0 | U       | Chloroethane              | 50.0 | U       |
| Styrene                     | 50.0 | U       | 2,2-Dichloropropane       | 50.0 | U       |
| Tetrachloroethylene         | 50.0 | U       | o-Chlorotoluene           | 50.0 | U       |
| Toluene                     | 50.0 | U       | p-Chlorotoluene           | 50.0 | U       |
| Xylenes (total)             | 50.0 | U       | Bromobenzene              | 50.0 | U       |
| Dichloromethane             | 50.0 | U       | cis-1,3-Dichloropropane   | 50.0 | U       |
| 1,2,4-Trichlorobenzene      | 50.0 | U       | trans-1,3-Dichloropropane | 50.0 | U       |
| 1,1,2-Trichloroethane       | 50.0 | U       | Dibromomethane            | 50.0 | U       |
| Ethylene Dibromide          | 50.0 | U       |                           |      |         |
| 1,2-dibromo-3-chloropropane | 50.0 | U       |                           |      |         |
|                             |      |         |                           |      |         |
|                             | MRL  | Results |                           | MRL  | Results |
|                             |      | ug/kg   |                           |      | ug/kg   |
| 1,2,4-Trimethylbenzene      | 50.0 | U       | p-Isopropyltoluene        | 50.0 | U       |
| 1,2,3-Trichlorobenzene      | 50.0 | U       | Isopropylbenzene          | 50.0 | U       |
| n-Propylbenzene             | 50.0 | U       | Tert-butylbenzene         | 50.0 | U       |
| n-Butylbenzene              | 50.0 | U       | Sec-butylbenzene          | 50.0 | U       |
| Napthalene                  | 50.0 | U       | Fluorotrichloromethane    | 50.0 | U       |
| Hexachlorobutadiene         | 50.0 | U       | Dichlorodifluoromethane   | 50.0 | U       |
| 1,3,5-Trimethylbenzene      | 50.0 | U       | Bromochloromethane        | 50.0 | U       |
| Methyl T-Butyl Ether        | 50.0 | U       |                           |      |         |

U- Analyzed for but not detected

J- Below MRL

B- Found in blank

Analysis Certified By: J. OrnanDate: 27 Sept 10

**volatile organics (8260B)**  
**201005029**

| parameter                          | required<br>detection<br>limit | units | Results |       |
|------------------------------------|--------------------------------|-------|---------|-------|
| standard list                      |                                |       |         |       |
| 1,1,1,2-tetrachloroethane          | 6                              | mg/kg | < 6     | mg/kg |
| 1,1,1-trichloroethane              | 6                              | mg/kg | <6      | mg/kg |
| 1,1,2,2-tetrachloroethane          | 6                              | mg/kg | < 6     | mg/kg |
| 1,1,2-trichloroethane              | 6                              | mg/kg | <6      | mg/kg |
| 1,1-dichloroethane                 | 6                              | mg/kg | <6      | mg/kg |
| 1,1-dichloroethene                 | 6                              | mg/kg | <6      | mg/kg |
| 1,2,3-trichloropropane             | 30                             | mg/kg | <30     | mg/kg |
| 1,2-dibromoethane (DBE)            | 15                             | mg/kg | <15     | mg/kg |
| 1,2-dichloroethane                 | 6                              | mg/kg | <6      | mg/kg |
| 1,2-dichloropropane                | 18                             | mg/kg | <18     | mg/kg |
| 1,2-dibromo-3-chloropropane (DBCP) | 15                             | mg/kg | <15     | mg/kg |
| benzene                            | 10                             | mg/kg | <10     | mg/kg |
| bromodichloromethane               | 15                             | mg/kg | <15     | mg/kg |
| bromoform                          | 15                             | mg/kg | <15     | mg/kg |
| bromomethane                       | 15                             | mg/kg | <15     | mg/kg |
| carbon tetrachloride               | 6                              | mg/kg | <6      | mg/kg |
| chlorobenzene                      | 6                              | mg/kg | <6      | mg/kg |
| dibromochloromethane               | 15                             | mg/kg | <15     | mg/kg |
| chloroethane                       | 6                              | mg/kg | <6      | mg/kg |
| chloroform                         | 6                              | mg/kg | <6      | mg/kg |
| chloromethane                      | 30                             | mg/kg | <30     | mg/kg |
| cis-1,3-dichloropropene            | 18                             | mg/kg | <18     | mg/kg |
| dibromomethane                     | 15                             | mg/kg | <15     | mg/kg |
| dichlorodifluoromethane            | 7.2                            | mg/kg | <7.2    | mg/kg |
| ethylbenzene                       | 10                             | mg/kg | <10     | mg/kg |
| ethyl ether                        | 160                            | mg/kg | <160    | mg/kg |
| methylene chloride                 | 30                             | mg/kg | <30     | mg/kg |
| tetrachloroethene                  | 6                              | mg/kg | <6      | mg/kg |
| toluene                            | 10                             | mg/kg | <10     | mg/kg |
| trans-1,2-dichloroethene           | 30                             | mg/kg | <30     | mg/kg |
| trans-1,3-dichloropropene          | 18                             | mg/kg | <18     | mg/kg |
| trichloroethene                    | 6                              | mg/kg | <6      | mg/kg |
| trichlorofluoromethane             | 30                             | mg/kg | <30     | mg/kg |
| vinyl chloride                     | 6                              | mg/kg | <6      | mg/kg |
| xylenes (total)                    | 30                             | mg/kg | <30     | mg/kg |

| extended list        |     |       | RESULTS |       |
|----------------------|-----|-------|---------|-------|
| acetone              | 160 | mg/kg | <160    | mg/kg |
| acetonitrile         | 38  | mg/kg | <38     | mg/kg |
| acrylonitrile        | 84  | mg/kg | <84     | mg/kg |
| allyl chloride       | 30  | mg/kg | <30     | mg/kg |
| carbon disulfide     | 4.8 | mg/kg | <4.8    | mg/kg |
| 2-butanone (MEK)     | 36  | mg/kg | <36     | mg/kg |
| 1,4-dioxane          | 170 | mg/kg | <170    | mg/kg |
| ethyl acetate        | 33  | mg/kg | <33     | mg/kg |
| ethyl methacrylate   | 160 | mg/kg | <160    | mg/kg |
| iodomethane          | 65  | mg/kg | <65     | mg/kg |
| isobutyl alcohol     | 170 | mg/kg | <170    | mg/kg |
| methacrylonitrile    | 84  | mg/kg | <84     | mg/kg |
| methyl methacrylate  | 160 | mg/kg | <160    | mg/kg |
| 4-methyl-2-pentanone | 33  | mg/kg | <33     | mg/kg |
| propionitrile        | 360 | mg/kg | <360    | mg/kg |

Extended list compounds are Analysed as \*TIC  
\*Tentatively identified

Cost Code: 365

EPA METHOD 8270/625 (GC/MS)  
Base Neutral/Acid Extractables

Lab # 201005029

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:03

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY SLAG COMPOSITE SL100913W

Analyst: Alia Rauf

Date Received: 09/13/2010

Date Analyzed: 09/21/10

Aliquot Sample Extracted: 30g

Final Extract Volume: 1ml

(MDL based on 1 L. extracted, 1 ml final volume)

| Name                        | MRL/Results | ug/kg | MRL/Results                        | ug/kg          |
|-----------------------------|-------------|-------|------------------------------------|----------------|
| Acenaphthene                | 33.0        | U     | Hexachlorobenzene                  | 99.0 U         |
| Acenaphthylene              | 33.0        | U     | Hexachlorobutadiene                | 66.0 U         |
| Anthracene                  | 33.0        | U     | Hexachloroethane                   | 33.0 U         |
| Aniline                     | 132.0       | U     | Hexachlorocyclopentadiene          | 330.0 U        |
| Benzidine                   | 660.0       | U     | Ideno(1,2,3-c,d)pyrene             | 33.0 U         |
| Benzo(a)anthracene          | 33.0        | U     | Isophorone                         | 33.0 U         |
| Benzo(b)fluoranthene        | 33.0        | U     | 2-Methyl-4,6-dinitrophenol         | 165.0 U        |
| Benzo(k)fluoranthene        | 33.0        | U     | 2-Methyl naphthalene               | 33.0 U         |
| Benzo(a)pyrene              | 33.0        | U     | 2-Methyl phenol (o-cresol)         | 33.0 U         |
| Benzo(ghi)perylene          | 33.0        | U     | 3-Methyl phenol (m-cresol)         | 33.0 U         |
| Benzylbutylphthalate        | 33.0        | U     | 4-Methyl phenol (p-cresol)         | 66.0 U         |
| Benzyl alcohol              | 165.0       | U     | Naphthalene                        | 33.0 U         |
| Benzoic acid                | 990.0       | U     | 2-Nitroaniline                     | 33.0 U         |
| Bis(2-chloroethyl)ether     | 33.0        | U     | 3-Nitroaniline                     | 66.0 U         |
| Bis(2-chloroethoxy)methane  | 33.0        | U     | 4-Nitroaniline                     | 66.0 U         |
| Bis(2-chloroisopropyl)ether | 33.0        | U     | Nitrobenzene                       | 66.0 U         |
| Bis(2-ethylhexyl)phthalate  | 33.0        | J29.8 | 2-Nitrophenol                      | 165.0 U        |
| 4-Bromophenyl phenyl ether  | 33.0        | U     | 4-Nitrophenol                      | 330.0 U        |
| 4-Chloraniline              | 33.0        | U     | n-Nitrosodimethylamine             | 132.0 U        |
| 2-Chloronaphthalene         | 33.0        | U     | n-Nitrosodiphenylamine             | 66.0 U         |
| 4-Chloro-3-methyl phenol    | 33.0        | U     | n-Nitrosodipropylamine             | 99.0 U         |
| 2-Chlorophenol              | 33.0        | U     | Pentachlorophenol                  | 330.0 U        |
| 4-Chlorophenyl phenyl ether | 66.0        | U     | Phenanthrene                       | 33.0 U         |
| Chrysene                    | 33.0        | U     | Phenol                             | 66.0 U         |
| Dibenzo(a,h)anthracene      | 33.0        | U     | Pyrene                             | 33.0 U         |
| Dibenzofuran                | 66.0        | U     | 1,2,4-Trichlorobenzene             | 33.0 U         |
| Di-n-butyl phthalate        | 33.0        | U     | 2,4,6-Trichlorophenol              | 66.0 U         |
| 1,3-Dichlorobenzene (meta)  | 33.0        | U     | Tentatively Identified Compounds   |                |
| 1,2-Dichlorobenzene (ortho) | 33.0        | U     | Name                               | Scan # Results |
| 1,4-Dichlorobenzene (para)  | 33.0        | U     |                                    |                |
| 3,3-Dichlorobenzidine       | 66.0        | U     |                                    |                |
| 2,4-Dichlorophenol          | 66.0        | U     |                                    |                |
| 2,4-Dimethylphenol          | 33.0        | U     |                                    |                |
| Diethyl phthalate           | 33.0        | U     |                                    |                |
| 2,4-Dinitrophenol           | 330.0       | U     |                                    |                |
| Dimethyl phthalate          | 33.0        | U     | U - Analyzed for but not detected. |                |
| 2,4-Dinitrotoluene          | 33.0        | U     | J - Less than MRL                  |                |
| 2,6-Dinitrotoluene          | 33.0        | U     | B - Found in the blank             |                |
| Di-n-octyl phthalate        | 33.0        | U     | N - Not analyzed                   |                |
| Fluoranthene                | 33.0        | U     |                                    |                |
| Fluorene                    | 33.0        | U     |                                    |                |

Analysis Certified By: J. Oman

Date: 30 Sept 10

Cost Code: 365

METHOD 515.1/8151  
Chlorinated Acids

Lab# 201005029

UDEQ - DSHW

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:03

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY SLAG COMPOSITE SL100913W

Analyst:

Date Received: 09/13/2010

Date Analyzed:

9/30/10

Regulated

MRL

## Results

2,4,5-TP

5.0  $\mu\text{g}/\text{kg}$

U

2,4,5,-T

5.0 ug/kg

U

2,4-D

5.0 ug/kg

U

Analysis Certified By:

Date:

9/30/10



Cost Code: 365

EPA METHOD 608/6081 by GC/MS  
PCB's and Organochlorine Pesticides

Lab # 201005029

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:03

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY SLAG COMPOSITE SL100913W

Analyst: J. Chan

Date Received: 09/13/2010

Date Analyzed: 22 Sept 10

Aliquot Sample Extracted: 30g

Final Volume Extract: 1ml

(MDL based on 1 L extraction and 10 ml final volume).

| Compound            | MRL/Results ug/kg |   |
|---------------------|-------------------|---|
| Aldrin              | 33.0              | U |
| alpha-BHC           | 33.0              | U |
| beta-BHC            | 33.0              | U |
| delta-BHC           | 33.0              | U |
| gamma-BHC (Lindane) | 33.0              | U |
| Chlordane           | 660.0             | U |
| 4,4'-DDD            | 33.0              | U |
| 4,4'-DDE            | 33.0              | U |
| 4,4'-DDT            | 33.0              | U |
| Dieldrin            | 33.0              | U |
| Endosulfan I        | 33.0              | U |
| Endosulfan II       | 33.0              | U |
| Endosulfan sulfate  | 33.0              | U |
| Endrin              | 33.0              | U |
| Endrin aldehyde     | 33.0              | U |
| Heptachlor          | 33.0              | U |
| Heptachlor epoxide  | 33.0              | U |
| Toxaphene           | 1320.0            | U |
| Methoxychlor        | 33.0              | U |
| PCB-1016            | 330.0             | U |
| PCB-1221            | 660.0             | U |
| PCB-1232            | 660.0             | U |
| PCB-1242            | 660.0             | U |
| PCB-1248            | 660.0             | U |
| PCB-1254            | 660.0             | U |
| PCB-1260            | 330.0             | U |

U - Analyzed for but not detected.

J - A value less than the detection limit  
but greater than zero.

B - Found in the blank.

Analysis Certified By: Alia Rany

Date: 09/23/10

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 8

Unified State Lab  
September 6-12, 2010 weekly residue composite

Cost Code: 365

EPA METHOD 8260B/624 GC/MS

Lab #: 201005030

Purgeables

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:25Sample Matrix: Soil/SolidCollected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY RESIDUE COMPOSITE RD100913WAnalyst: Alia KaufDate Received: 09/13/2010Date Analyzed: 09/15/10

|                             | MRL  | Results |                           | MRL  | Results |
|-----------------------------|------|---------|---------------------------|------|---------|
|                             |      | ug/kg   |                           |      | ug/kg   |
| Benzene                     | 50.0 | U       | Chloroform                | 50.0 | U       |
| Carbon Tetrachloride        | 50.0 | U       | Bromodichloromethane      | 50.0 | U       |
| 1,2-Dichloroethane          | 50.0 | U       | Chlorodibromomethane      | 50.0 | U       |
| 1,1-Dichloroethylene        | 50.0 | U       | Bromoform                 | 50.0 | U       |
| Para-Dichlorobenzene        | 50.0 | U       | m-Dichlorobenzene         | 50.0 | U       |
| 1,1,1-Trichloroethane       | 50.0 | U       | 1,1-Dichloropropene       | 50.0 | U       |
| Trichloroethylene           | 50.0 | U       | 1,1-Dichloroethane        | 50.0 | U       |
| Vinyl Chloride              | 50.0 | U       | 1,1,2,2-Tetrachloroethane | 50.0 | U       |
| o-Dichlorobenzene           | 50.0 | U       | 1,3-Dichloropropane       | 50.0 | U       |
| cis 1,2-Dichloroethylene    | 50.0 | U       | Chloromethane             | 50.0 | B125.0  |
| trans 1,2-Dichloroethylene  | 50.0 | U       | Bromomethane              | 50.0 | B390.0  |
| 1,2-Dichloropropane         | 50.0 | U       | 1,2,3-Trichloropropane    | 50.0 | U       |
| Ethylbenzene                | 50.0 | U       | 1,1,1,2-Tetrachloroethane | 50.0 | U       |
| Monochlorobenzene           | 50.0 | U       | Chloroethane              | 50.0 | U       |
| Styrene                     | 50.0 | U       | 2,2-Dichloropropane       | 50.0 | U       |
| Tetrachloroethylene         | 50.0 | U       | o-Chlorotoluene           | 50.0 | U       |
| Toluene                     | 50.0 | U       | p-Chlorotoluene           | 50.0 | U       |
| Xylenes (total)             | 50.0 | U       | Bromobenzene              | 50.0 | U       |
| Dichloromethane             | 50.0 | U       | cis-1,3-Dichloropropene   | 50.0 | U       |
| 1,2,4-Trichlorobenzene      | 50.0 | U       | trans-1,3-Dichloropropene | 50.0 | U       |
| 1,1,2-Trichloroethane       | 50.0 | U       | Dibromomethane            | 50.0 | U       |
| Ethylene Dibromide          | 50.0 | U       |                           |      |         |
| 1,2-dibromo-3-chloropropane | 50.0 | U       |                           |      |         |
|                             |      |         |                           |      |         |
|                             | MRL  | Results |                           | MRL  | Results |
|                             |      | ug/kg   |                           |      | ug/kg   |
| 1,2,4-Trimethylbenzene      | 50.0 | U       | p-Isopropyltoluene        | 50.0 | U       |
| 1,2,3-Trichlorobenzene      | 50.0 | U       | Isopropylbenzene          | 50.0 | U       |
| n-Propylbenzene             | 50.0 | U       | Tert-butylbenzene         | 50.0 | U       |
| n-Butylbenzene              | 50.0 | U       | Sec-butylbenzene          | 50.0 | U       |
| Napthalene                  | 50.0 | U       | Fluorotrichloromethane    | 50.0 | U       |
| Hexachlorobutadiene         | 50.0 | U       | Dichlorodifluoromethane   | 50.0 | U       |
| 1,3,5-Trimethylbenzene      | 50.0 | U       | Bromochloromethane        | 50.0 | U       |
| Methyl T-Butyl Ether        | 50.0 | U       |                           |      |         |

U- Analyzed for but not detected

J- Below MRL

B- Found in blank

Analysis Certified By: L. AmanDate: 27 Sept 10

**volatile organics (8260B)**  
**201005030**

| parameter                          | required<br>detection<br>limit | units | Results |       |
|------------------------------------|--------------------------------|-------|---------|-------|
| standard list                      |                                |       |         |       |
| 1,1,1,2-tetrachloroethane          | 6                              | mg/kg | < 6     | mg/kg |
| 1,1,1-trichloroethane              | 6                              | mg/kg | <6      | mg/kg |
| 1,1,2,2-tetrachloroethane          | 6                              | mg/kg | < 6     | mg/kg |
| 1,1,2-trichloroethane              | 6                              | mg/kg | <6      | mg/kg |
| 1,1-dichloroethane                 | 6                              | mg/kg | <6      | mg/kg |
| 1,1-dichloroethene                 | 6                              | mg/kg | <6      | mg/kg |
| 1,2,3-trichloropropane             | 30                             | mg/kg | <30     | mg/kg |
| 1,2-dibromoethane (DBE)            | 15                             | mg/kg | <15     | mg/kg |
| 1,2-dichloroethane                 | 6                              | mg/kg | <6      | mg/kg |
| 1,2-dichloropropane                | 18                             | mg/kg | <18     | mg/kg |
| 1,2-dibromo-3-chloropropane (DBCP) | 15                             | mg/kg | <15     | mg/kg |
| benzene                            | 10                             | mg/kg | <10     | mg/kg |
| bromodichloromethane               | 15                             | mg/kg | <15     | mg/kg |
| bromoform                          | 15                             | mg/kg | <15     | mg/kg |
| bromomethane                       | 15                             | mg/kg | <15     | mg/kg |
| carbon tetrachloride               | 6                              | mg/kg | <6      | mg/kg |
| chlorobenzene                      | 6                              | mg/kg | <6      | mg/kg |
| dibromochloromethane               | 15                             | mg/kg | <15     | mg/kg |
| chloroethane                       | 6                              | mg/kg | <6      | mg/kg |
| chloroform                         | 6                              | mg/kg | <6      | mg/kg |
| chloromethane                      | 30                             | mg/kg | <30     | mg/kg |
| cis-1,3-dichloropropene            | 18                             | mg/kg | <18     | mg/kg |
| dibromomethane                     | 15                             | mg/kg | <15     | mg/kg |
| dichlorodifluoromethane            | 7.2                            | mg/kg | <7.2    | mg/kg |
| ethylbenzene                       | 10                             | mg/kg | <10     | mg/kg |
| ethyl ether                        | 160                            | mg/kg | <160    | mg/kg |
| methylene chloride                 | 30                             | mg/kg | <30     | mg/kg |
| tetrachloroethene                  | 6                              | mg/kg | <6      | mg/kg |
| toluene                            | 10                             | mg/kg | <10     | mg/kg |
| trans-1,2-dichloroethene           | 30                             | mg/kg | <30     | mg/kg |
| trans-1,3-dichloropropene          | 18                             | mg/kg | <18     | mg/kg |
| trichloroethene                    | 6                              | mg/kg | <6      | mg/kg |
| trichlorofluoromethane             | 30                             | mg/kg | <30     | mg/kg |
| vinyl chloride                     | 6                              | mg/kg | <6      | mg/kg |
| xylenes (total)                    | 30                             | mg/kg | <30     | mg/kg |

| extended list        |     |       | RESULTS |       |
|----------------------|-----|-------|---------|-------|
| acetone              | 160 | mg/kg | <160    | mg/kg |
| acetonitrile         | 38  | mg/kg | <38     | mg/kg |
| acrylonitrile        | 84  | mg/kg | <84     | mg/kg |
| allyl chloride       | 30  | mg/kg | <30     | mg/kg |
| carbon disulfide     | 4.8 | mg/kg | <4.8    | mg/kg |
| 2-butanone (MEK)     | 36  | mg/kg | <36     | mg/kg |
| 1,4-dioxane          | 170 | mg/kg | <170    | mg/kg |
| ethyl acetate        | 33  | mg/kg | <33     | mg/kg |
| ethyl methacrylate   | 160 | mg/kg | <160    | mg/kg |
| iodomethane          | 65  | mg/kg | <65     | mg/kg |
| isobutyl alcohol     | 170 | mg/kg | <170    | mg/kg |
| methacrylonitrile    | 84  | mg/kg | <84     | mg/kg |
| methyl methacrylate  | 160 | mg/kg | <160    | mg/kg |
| 4-methyl-2-pentanone | 33  | mg/kg | <33     | mg/kg |
| propionitrile        | 360 | mg/kg | <360    | mg/kg |

Extended list compounds are Analysec \*TIC

\*Tentatively identified

Cost Code: 365

EPA METHOD 8270/625 (GC/MS)  
Base Neutral/Acid Extractables

Lab # 201005030

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:25

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY RESIDUE COMPOSITE RD100913W

Analyst: Alia Rami

Date Received: 09/13/2010

Date Analyzed: 9/21/10

Aliquot Sample Extracted: 30g

Final Extract Volume: 1ml

(MDL based on 1 L. extracted, 1 ml final volume)

| Name                        | MRL/Results | ug/L   | MRL/Results                             | ug/L                  |
|-----------------------------|-------------|--------|---|-----------------------|
| Acenaphthene                | 33.0        | U      | Hexachlorobenzene                       | 99.0 U                |
| Acenaphthylene              | 33.0        | U      | Hexachlorobutadiene                     | 66.0 U                |
| Anthracene                  | 33.0        | U      | Hexachloroethane                        | 33.0 U                |
| Aniline                     | 132.0       | U      | Hexachlorocyclopentadiene               | 330.0 U               |
| Benzidine                   | 660.0       | U      | Ideno(1,2,3-c,d)pyrene                  | 33.0 U                |
| Benzo(a)anthracene          | 33.0        | U      | Isophorone                              | 33.0 U                |
| Benzo(b)fluoranthene        | 33.0        | U      | 2-Methyl-4,6-dinitrophenol              | 165.0 U               |
| Benzo(k)fluoranthene        | 33.0        | U      | 2-Methyl naphthalene                    | 33.0 U                |
| Benzo(a)pyrene              | 33.0        | U      | 2-Methyl phenol (o-cresol)              | 33.0 U                |
| Benzo(ghi)perylene          | 33.0        | U      | 3-Methyl phenol (m-cresol)              | 33.0 U                |
| Benzylbutylphthalate        | 33.0        | B47.5  | 4-Methyl phenol (p-cresol)              | 66.0 U                |
| Benzyl alcohol              | 165.0       | U      | Naphthalene                             | 33.0 U                |
| Benzoic acid                | 990.0       | U      | 2-Nitroaniline                          | 33.0 U                |
| Bis(2-chloroethyl)ether     | 33.0        | U      | 3-Nitroaniline                          | 66.0 U                |
| Bis(2-chloroethoxy)methane  | 33.0        | U      | 4-Nitroaniline                          | 66.0 U                |
| Bis(2-chloroisopropyl)ether | 33.0        | U      | Nitrobenzene                            | 66.0 U                |
| Bis(2-ethylhexyl)phthalate  | 33.0        | B185.0 | 2-Nitrophenol                           | 165.0 U               |
| 4-Bromophenyl phenyl ether  | 33.0        | U      | 4-Nitrophenol                           | 330.0 U               |
| 4-Chloraniline              | 33.0        | U      | n-Nitrosodimethylamine                  | 132.0 U               |
| 2-Chloronaphthalene         | 33.0        | U      | n-Nitrosodiphenylamine                  | 66.0 U                |
| 4-Chloro-3-methyl phenol    | 33.0        | U      | n-Nitrosodipropylamine                  | 99.0 U                |
| 2-Chlorophenol              | 33.0        | U      | Pentachlorophenol                       | 330.0 U               |
| 4-Chlorophenyl phenyl ether | 66.0        | U      | Phenanthrene                            | 33.0 U                |
| Chrysene                    | 33.0        | U      | Phenol                                  | 66.0 U                |
| Dibenzo(a,h)anthracene      | 33.0        | U      | Pyrene                                  | 33.0 U                |
| Dibenzofuran                | 66.0        | U      | 1,2,4-Trichlorobenzene                  | 33.0 U                |
| Di-n-butyl phthalate        | 33.0        | B66.9  | 2,4,6-Trichlorophenol                   | 66.0 U                |
| 1,3-Dichlorobenzene (meta)  | 33.0        | U      | <u>Tentatively Identified Compounds</u> |                       |
| 1,2-Dichlorobenzene (ortho) | 33.0        | U      |   |                       |
| 1,4-Dichlorobenzene (para)  | 33.0        | U      | <u>Name</u>                             | <u>Scan # Results</u> |
| 3,3-Dichlorobenzidine       | 66.0        | U      |   |                       |
| 2,4-Dichlorophenol          | 66.0        | U      |   |                       |
| 2,4-Dimethylphenol          | 33.0        | U      |   |                       |
| Diethyl phthalate           | 33.0        | B24.7  |   |                       |
| 2,4-Dinitrophenol           | 330.0       | U      |   |                       |
| Dimethyl phthalate          | 33.0        | U      | U - Analyzed for but not detected.      |                       |
| 2,4-Dinitrotoluene          | 33.0        | U      | J - Less than MRL                       |                       |
| 2,6-Dinitrotoluene          | 33.0        | U      | B - Found in the blank                  |                       |
| Di-n-octyl phthalate        | 33.0        | U      | N - Not analyzed                        |                       |
| Fluoranthene                | 33.0        | U      |   |                       |
| Fluorene                    | 33.0        | U      |   |                       |

one surrogate recovery was low

Analysis Certified By: J. OmanDate: 30 Sept 10

Cost Code: 365

METHOD 515.1/8151  
Chlorinated Acids

Lab# 201005030

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:25

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY RESIDUE COMPOSITE RD100913W

Analyst: JK

Date Received: 09/13/2010

Date Analyzed: 9/30/10

Regulated

MRL

Results

2,4,5-TP

5.0 ug/kg

U

2,4,5-T

5.0 ug/kg

U

2,4-D

5.0 ug/kg

U

Analysis Certified By: Paul Zb

Date: 9/30/10

Cost Code: 365

EPA METHOD 608/8081 by GC/MS  
PCB's and Organochlorine Pesticides

Lab # 201005030

Send Report To:

UDEQ - DSHW

ATTN:

PO BOX 144880

SALT LAKE CITY UT 84114-4880

Utah Division of Laboratory Services

46 North Medical Drive

Salt Lake City, UT 84113

Date/Time Collected: 09/13/201009:25

Sample Matrix: Soil/Solid

Collected By: RP

Sampling Site:

Description of Sampling Point: WEEKLY RESIDUE COMPOSITE RD100913W

Analyst: J. C. Man

Date Received: 09/13/2010

Date Analyzed: 09/23/10

Aliquot Sample Extracted: 30g

Final Volume Extract: 1ml

(MDL based on 1 L extraction and 10 ml final volume).

| Compound            | MRL/Results ug/kg |   |
|---------------------|-------------------|---|
| Aldrin              | 33.0              | U |
| alpha-BHC           | 33.0              | U |
| beta-BHC            | 33.0              | U |
| delta-BHC           | 33.0              | U |
| gamma-BHC (Lindane) | 33.0              | U |
| Chlordane           | 660.0             | U |
| 4,4'-DDD            | 33.0              | U |
| 4,4'-DDE            | 33.0              | U |
| 4,4'-DDT            | 33.0              | U |
| Dieldrin            | 33.0              | U |
| Endosulfan I        | 33.0              | U |
| Endosulfan II       | 33.0              | U |
| Endosulfan sulfate  | 33.0              | U |
| Endrin              | 33.0              | U |
| Endrin aldehyde     | 33.0              | U |
| Heptachlor          | 33.0              | U |
| Heptachlor epoxide  | 33.0              | U |
| Toxaphene           | 1320.0            | U |
| Methoxychlor        | 33.0              | U |
| PCB-1016            | 330.0             | U |
| PCB-1221            | 660.0             | U |
| PCB-1232            | 660.0             | U |
| PCB-1242            | 660.0             | U |
| PCB-1248            | 660.0             | U |
| PCB-1254            | 660.0             | U |
| PCB-1260            | 330.0             | U |

U - Analyzed for but not detected.

J - A value less than the detection limit  
but greater than zero.

B - Found in the blank.

Analysis Certified By: Alia Ramf

Date: 09/23/10

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 9

summary comparisons  
September 11, 2010 daily slag composite



| parameter        | Aragonite value | units           | State Health lab | units           | universal treatment standard | units | Aragonite vs UTS | State Lab vs UTS |
|------------------|-----------------|-----------------|------------------|-----------------|------------------------------|-------|------------------|------------------|
| metals           |                 |                 |                  |                 |                              |       |                  |                  |
| antimony         | <               | 0.08 mg/l TCLP  | <                | 0.01 mg/l TCLP  | 1.15 mg/l TCLP               |       | pass             | pass             |
| arsenic          | <               | 0.03 mg/l TCLP  |                  | 0.34 mg/l TCLP  | 5 mg/l TCLP                  |       | pass             | pass             |
| barium           |                 | 0.27 mg/l TCLP  |                  | 0.42 mg/l TCLP  | 21 mg/l TCLP                 |       | pass             | pass             |
| beryllium        | <               | 0.01 mg/l TCLP  | <                | 0.005 mg/l TCLP | 1.22 mg/l TCLP               |       | pass             | pass             |
| cadmium          | <               | 0.01 mg/l TCLP  |                  | 0.01 mg/l TCLP  | 0.11 mg/l TCLP               |       | pass             | pass             |
| chromium (total) | <               | 0.01 mg/l TCLP  |                  | 0.04 mg/l TCLP  | 0.6 mg/l TCLP                |       | pass             | pass             |
| lead             |                 | 0.03 mg/l TCLP  |                  | 0.01 mg/l TCLP  | 0.75 mg/l TCLP               |       | pass             | pass             |
| mercury          | <               | 0.025 mg/l TCLP | <                | 0.2 mg/l TCLP   | 0.025 mg/l TCLP              |       | pass             | fail             |
| nickel           |                 | 0.97 mg/l TCLP  |                  | 2.26 mg/l TCLP  | 11 mg/l TCLP                 |       | pass             | pass             |
| selenium         | <               | 0.04 mg/l TCLP  | <                | 0.01 mg/l TCLP  | 5.7 mg/l TCLP                |       | pass             | pass             |
| silver           | <               | 0.06 mg/l TCLP  |                  | 0.05 mg/l TCLP  | 0.14 mg/l TCLP               |       | pass             | pass             |
| thallium         | <               | 0.05 mg/l TCLP  | <                | 0.01 mg/l TCLP  | 0.2 mg/l TCLP                |       | pass             | pass             |
| vanadium         | <               | 0.01 mg/l TCLP  |                  | 0.05 mg/l TCLP  | 1.6 mg/l TCLP                |       | pass             | pass             |
| zinc             | <               | 0.06 mg/l TCLP  |                  | 0.235 mg/l TCLP | 4.3 mg/l TCLP                |       | pass             | pass             |

PCBs 8082 Aragonite Lab

| parameter  | Aragonite value | units     | State Health lab | units       | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|--|-----------------|-----------|------------------|-------------|------------------------------------|-------|---------------------|---------------------|
| total PCBs (sum of all PCB isomers,<br>or all Arochlors) | <               | 0.4 mg/kg | <                | 1.025 mg/kg | 10 mg/kg                           |       | pass                | pass                |

| parameter  | Aragonite value | units     | State Health lab | units       | TSCA<br>permit | units | Aragonite<br>vs TSCA | State Lab<br>vs TSCA |
|--|-----------------|-----------|------------------|-------------|----------------|-------|----------------------|----------------------|
| total PCBs (sum of all PCB isomers,<br>or all Arochlors) | <               | 0.4 mg/kg | <                | 1.025 mg/kg | 2 ppm          |       | pass                 | pass                 |

daily slag  
September 11, 2010

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 10

summary comparisons

September 11, 2010 daily residue composite

|                  |   |                 |           |                  | universal<br>treatment<br>standard |           | Aragonite<br>vs UTS | State Lab<br>vs UTS |      |      |
|------------------|---|-----------------|-----------|------------------|------------------------------------|-----------|---------------------|---------------------|------|------|
| parameter        |   | Aragonite value | units     | State Health lab | units                              |           |                     |                     |      |      |
| metals           |   |                 |           |                  |                                    |           |                     |                     |      |      |
| antimony         |   | 1.08            | mg/l TCLP |                  | 0.858                              | mg/l TCLP | 1.15                | mg/l TCLP           | pass | pass |
| arsenic          |   | 3.02            | mg/l TCLP |                  | 0.96                               | mg/l TCLP | 5                   | mg/l TCLP           | pass | pass |
| barium           | < | 0.01            | mg/l TCLP |                  | 0.45                               | mg/l TCLP | 21                  | mg/l TCLP           | pass | pass |
| beryllium        | < | 0.01            | mg/l TCLP | <                | 0.05                               | mg/l TCLP | 1.22                | mg/l TCLP           | pass | pass |
| cadmium          |   | 1.91            | mg/l TCLP |                  | 2.49                               | mg/l TCLP | 0.11                | mg/l TCLP           | fail | fail |
| chromium (total) | < | 0.01            | mg/l TCLP |                  | 0.23                               | mg/l TCLP | 0.6                 | mg/l TCLP           | pass | pass |
| lead             |   | 0.43            | mg/l TCLP |                  | 4.88                               | mg/l TCLP | 0.75                | mg/l TCLP           | pass | fail |
| mercury          |   | 0.047           | mg/l TCLP | <                | 0.2                                | mg/l TCLP | 0.025               | mg/l TCLP           | fail | fail |
| nickel           |   | 0.43            | mg/l TCLP | <                | 0.05                               | mg/l TCLP | 11                  | mg/l TCLP           | pass | pass |
| selenium         |   | 0.36            | mg/l TCLP | <                | 0.1                                | mg/l TCLP | 5.7                 | mg/l TCLP           | pass | pass |
| silver           |   | 0.16            | mg/l TCLP |                  | 0.1                                | mg/l TCLP | 0.14                | mg/l TCLP           | fail | pass |
| thallium         | < | 0.05            | mg/l TCLP | <                | 0.1                                | mg/l TCLP | 0.2                 | mg/l TCLP           | pass | pass |
| vanadium         | < | 0.01            | mg/l TCLP |                  | 0.5                                | mg/l TCLP | 1.6                 | mg/l TCLP           | pass | pass |
| zinc             |   | 25.5            | mg/l TCLP |                  | 35.9                               | mg/l TCLP | 4.3                 | mg/l TCLP           | fail | fail |

daily residue  
September 11, 2010

PCBs 8082 Aragonite Lab

| parameter  | Aragonite value | units     | State Health lab | units       | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS  | State Lab<br>vs UTS  |
|--|-----------------|-----------|------------------|-------------|------------------------------------|-------|----------------------|----------------------|
| total PCBs (sum of all PCB isomers,<br>or all Arochlors) | <               | 0.4 mg/kg | <                | 0.996 mg/kg | 10 mg/kg                           |       | pass                 | pass                 |
|  | Aragonite value | units     | State Health lab | units       | TSCA<br>permit                     | units | Aragonite<br>vs TSCA | State Lab<br>vs TSCA |
| total PCBs (sum of all PCB isomers,<br>or all Arochlors) | <               | 0.4 mg/kg | <                | 0.996 mg/kg | 2 ppm                              |       | pass                 | pass                 |

daily residue  
September 11, 2010

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 11

summary comparisons

September 6-12, 2010 weekly slag composite

| parameter                             | Aragonite value |            | State Health |           | universal treatment |       | Aragonite |        | State Lab |        |
|---------------------------------------|-----------------|------------|--------------|-----------|---------------------|-------|-----------|--------|-----------|--------|
|                                       | units           | units      | lab value    | units     | standard            | units | vs UTS    | vs UTS | vs UTS    | vs UTS |
| 1,1,1,2-tetrachloroethane             | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,1,1-trichloroethane                 | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,1,2,2-tetrachloroethane             | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,1,2-trichloro-1,2,2-trifluoroethane | <               | 1 mg/kg    | N/A          |           | 30 mg/kg            | pass  | N/A       | pass   | N/A       | N/A    |
| 1,1,2-trichloroethane                 | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,1-dichloroethane                    | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,1-dichloroethene                    | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,2,3-trichloropropane                | <               | 0.25 mg/kg | <            | 30 mg/kg  | 30 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| 1,2-dibromoethane (DBE)               | <               | 0.25 mg/kg | <            | 50 µg/kg  | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| 1,2-dichlorobenzene                   | semivolatile    |            | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,2-dichloroethane                    | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,2-dichloropropane                   | <               | 0.25 mg/kg | <            | 50 µg/kg  | 18 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| 1,3-dichlorobenzene                   | semivolatile    |            | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,4-dichlorobenzene                   | semivolatile    |            | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| 1,4-dioxane                           | <               | 25 mg/kg   | <            | 170 mg/kg | 170 mg/kg           | pass  | pass      | pass   | pass      | pass   |
| n-butanol                             | <               | 10 mg/kg   | N/A          |           | 2.6 mg/kg           | fail  | N/A       | fail   | N/A       | N/A    |
| 2-butanone (MEK)                      | <               | 1 mg/kg    | <            | 36 mg/kg  | 36 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| 2-chloro-1,3-butadiene                | <               | 0.25 mg/kg | N/A          |           | 0.28 mg/kg          | pass  | N/A       | pass   | N/A       | N/A    |
| 1,2-dibromo-3-chloropropane (DBCP)    | <               | 0.5 mg/kg  | <            | 50 µg/kg  | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| allyl chloride                        | <               | 0.5 mg/kg  | <            | 30 mg/kg  | 30 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| 4-methyl-2-pentanone                  | <               | 1 mg/kg    | <            | 33 mg/kg  | 33 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| acetone                               | <               | 1 mg/kg    | <            | 160 mg/kg | 160 mg/kg           | pass  | pass      | pass   | pass      | pass   |
| acetonitrile                          | <               | 5 mg/kg    | <            | 38 mg/kg  | 38 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| acrylonitrile                         | <               | 5 mg/kg    | <            | 84 mg/kg  | 84 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| benzal chloride                       | semivolatile    |            | N/A          |           | 6 mg/kg             | pass  | N/A       | pass   | N/A       | N/A    |
| benzene                               | <               | 0.25 mg/kg | <            | 50 µg/kg  | 10 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| bromodichloromethane                  | <               | 0.25 mg/kg | <            | 50 µg/kg  | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| bromoform                             | <               | 0.25 mg/kg | <            | 50 µg/kg  | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| bromomethane                          | <               | 0.5 mg/kg  |              | 480 µg/kg | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| carbon disulfide                      | <               | 0.25 mg/kg | <            | 4.8 mg/kg | 4.8 mg/l TCLP       | pass  | pass      | pass   | pass      | pass   |
| carbon tetrachloride                  | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| chlorobenzene                         | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| dibromochloromethane                  | <               | 0.25 mg/kg | <            | 50 µg/kg  | 15 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| chloroethane                          | <               | 0.5 mg/kg  | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| chloroform                            | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             | pass  | pass      | pass   | pass      | pass   |
| chloromethane                         | <               | 0.5 mg/kg  |              | 147 µg/kg | 30 mg/kg            | pass  | pass      | pass   | pass      | pass   |
| cis-1,3-dichloropropene               | <               | 0.25 mg/kg | <            | 50 µg/kg  | 18 mg/kg            | pass  | pass      | pass   | pass      | pass   |

| parameter                 | Aragonite value |            | State Health |           | universal treatment |       | Aragonite | State Lab |
|---------------------------|-----------------|------------|--------------|-----------|---------------------|-------|-----------|-----------|
|                           | units           |            | lab value    | units     | standard            | units | vs UTS    | vs UTS    |
| cyclohexanone             | <               | 4 mg/kg    | N/A          |           | 0.75 mg/l TCLP      |       | fail      | N/A       |
| dibromomethane            | <               | 0.25 mg/kg | <            | 50 µg/kg  | 15 mg/kg            |       | pass      | pass      |
| dichlorodifluoromethane   | <               | 0.5 mg/kg  | <            | 50 µg/kg  | 7.2 mg/kg           |       | pass      | pass      |
| ethyl acetate             | <               | 0.5 mg/kg  | <            | 33 mg/kg  | 33 mg/kg            |       | pass      | pass      |
| ethyl ether               | <               | 0.5 mg/kg  | <            | 160 mg/kg | 160 mg/kg           |       | pass      | pass      |
| ethyl methacrylate        | <               | 0.25 mg/kg | <            | 160 mg/kg | 160 mg/kg           |       | pass      | pass      |
| ethylbenzene              | <               | 0.25 mg/kg | <            | 50 µg/kg  | 10 mg/kg            |       | pass      | pass      |
| iodomethane               | <               | 0.25 mg/kg | <            | 65 mg/kg  | 65 mg/kg            |       | pass      | pass      |
| isobutyl alcohol          | <               | 10 mg/kg   | <            | 170 mg/kg | 170 mg/kg           |       | pass      | pass      |
| methacrylonitrile         | <               | 2.5 mg/kg  | <            | 84 mg/kg  | 84 mg/kg            |       | pass      | pass      |
| methyl methacrylate       | <               | 0.25 mg/kg | <            | 160 mg/kg | 160 mg/kg           |       | pass      | pass      |
| methylene chloride        | <               | 0.25 mg/kg | <            | 50 µg/kg  | 30 mg/kg            |       | pass      | pass      |
| propionitrile             | <               | 1 mg/kg    | <            | 360 mg/kg | 360 mg/kg           |       | pass      | pass      |
| tetrachloroethene         | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             |       | pass      | pass      |
| toluene                   | <               | 0.25 mg/kg | <            | 50 µg/kg  | 10 mg/kg            |       | pass      | pass      |
| trans-1,2-dichloroethene  | <               | 0.13 mg/kg | <            | 50 µg/kg  | 30 mg/kg            |       | pass      | pass      |
| trans-1,3-dichloropropene | <               | 0.25 mg/kg | <            | 50 µg/kg  | 18 mg/kg            |       | pass      | pass      |
| trichloroethene           | <               | 0.25 mg/kg | <            | 50 µg/kg  | 6 mg/kg             |       | pass      | pass      |
| trichlorofluoromethane    | <               | 0.5 mg/kg  | <            | 50 µg/kg  | 30 mg/kg            |       | pass      | pass      |
| vinyl chloride            | <               | 0.5 mg/kg  | <            | 50 µg/kg  | 6 mg/kg             |       | pass      | pass      |
| xlenes (total)            | <               | 0.25 mg/kg | <            | 50 µg/kg  | 30 mg/kg            |       | pass      | pass      |



| parameter                          | Aragonite value | units     | State Health<br>lab value | units     | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|------------------------------------|-----------------|-----------|---------------------------|-----------|------------------------------------|-------|---------------------|---------------------|
| 1,2,4,5-tetrachlorobenzene         | <               | 0.3 mg/kg | N/A                       |           | 14 mg/kg                           |       | pass                | N/A                 |
| 1,2,4-trichlorobenzene             | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 19 mg/kg                           |       | pass                | pass                |
| 1,2-dichlorobenzene                | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 6 mg/kg                            |       | pass                | pass                |
| 1,3-dichlorobenzene                | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 6 mg/kg                            |       | pass                | pass                |
| 1,3-phenylenediamine               | <               | mg/kg     | N/A                       |           | 0.66 mg/kg                         |       | pass                | N/A                 |
| 1,4-dichlorobenzene                | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 6 mg/kg                            |       | pass                | pass                |
| 1,4-dinitrobenzene                 | <               | 0.3 mg/kg | N/A                       |           | 2.3 mg/kg                          |       | pass                | N/A                 |
| 2,3,4,6-tetrachlorophenol          | <               | 1.6 mg/kg | N/A                       |           | 7.4 mg/kg                          |       | pass                | N/A                 |
| 2,4,5-trichlorophenol              | <               | 0.3 mg/kg | N/A                       |           | 7.4 mg/kg                          |       | pass                | N/A                 |
| 2,4,6-trichlorophenol              | <               | 0.3 mg/kg | <                         | 66 µg/kg  | 7.4 mg/kg                          |       | pass                | pass                |
| 2,4-dichlorophenol                 | <               | 0.3 mg/kg | <                         | 66 µg/kg  | 14 mg/kg                           |       | pass                | pass                |
| 2,4-dimethylaniline(2,4-xylidine)  | <               | mg/kg     | N/A                       |           | 0.66 mg/kg                         |       | pass                | N/A                 |
| 2,4-dimethylphenol                 | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 14 mg/kg                           |       | pass                | pass                |
| 2,4-dinitrophenol                  | <               | 1.6 mg/kg | <                         | 330 µg/kg | 160 mg/kg                          |       | pass                | pass                |
| 2,4-dinitrotoluene                 | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 140 mg/kg                          |       | pass                | pass                |
| 2,6-dichlorophenol                 | <               | 0.3 mg/kg | N/A                       |           | 14 mg/kg                           |       | pass                | N/A                 |
| 2,6-dinitrotoluene                 | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 28 mg/kg                           |       | pass                | pass                |
| 2-acetylaminofluorene              | <               | 3.3 mg/kg | N/A                       |           | 140 mg/kg                          |       | pass                | N/A                 |
| 2-chloronaphthalene                | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 5.6 mg/kg                          |       | pass                | pass                |
| 2-chlorophenol                     | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 5.7 mg/kg                          |       | pass                | pass                |
| 2-methyl phenol                    | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 5.6 mg/kg                          |       | pass                | pass                |
| 2-nitroaniline                     | <               | 1.6 mg/kg | <                         | 33 µg/kg  | 14 mg/kg                           |       | pass                | pass                |
| 2-nitrophenol                      | <               | 0.3 mg/kg | <                         | 165 µg/kg | 13 mg/kg                           |       | pass                | pass                |
| 2-sec-butyl-4,6-dinitrophenol      | <               | 0.7 mg/kg | N/A                       |           | 2.5 mg/kg                          |       | pass                | N/A                 |
| 3-methyl phenol                    | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 5.6 mg/kg                          |       | pass                | pass                |
| 3-methylcholanthrene               | <               | 0.7 mg/kg | N/A                       |           | 15 mg/kg                           |       | pass                | N/A                 |
| 4,4'-methylenebis(2-chloroaniline) | <               | 0.3 mg/kg | N/A                       |           | 30 mg/kg                           |       | pass                | N/A                 |
| 4,6-dinitro-2-methylphenol         | <               | 1.6 mg/kg | <                         | 165 µg/kg | 160 mg/kg                          |       | pass                | pass                |
| 4-bromophenyl phenyl ether         | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 15 mg/kg                           |       | pass                | pass                |
| 4-chloro-3-methylphenol            | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 14 mg/kg                           |       | pass                | pass                |
| 4-chloroaniline                    | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 16 mg/kg                           |       | pass                | pass                |
| 4-methyl phenol                    | <               | 0.3 mg/kg | <                         | 66 µg/kg  | 5.6 mg/kg                          |       | pass                | pass                |
| 4-nitroaniline                     | <               | 1.6 mg/kg | <                         | 66 µg/kg  | 28 mg/kg                           |       | pass                | pass                |
| 4-nitrophenol                      | <               | 1.6 mg/kg | <                         | 330 µg/kg | 29 mg/kg                           |       | pass                | pass                |
| 5-nitro-o-toluidine                | <               | 0.7 mg/kg | N/A                       |           | 28 mg/kg                           |       | pass                | N/A                 |
| acenaphthene                       | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 3.4 mg/kg                          |       | pass                | pass                |
| acenaphthylene                     | <               | 0.3 mg/kg | <                         | 33 µg/kg  | 3.4 mg/kg                          |       | pass                | pass                |

| parameter                   | Aragonite value |      |       | units | State Health |       | universal treatment |       | Aragonite vs UTS | State Lab vs UTS |
|-----------------------------|-----------------|------|-------|-------|--------------|-------|---------------------|-------|------------------|------------------|
|                             |                 |      |       |       | lab value    | units | standard            | units |                  |                  |
| acetophenone                | <               | 0.3  | mg/kg |       | N/A          |       | 9.7                 | mg/kg | pass             | N/A              |
| acrylamide                  | <               | 1.6  | mg/kg |       | N/A          |       | 23                  | mg/kg | pass             | N/A              |
| aniline                     | <               | 0.3  | mg/kg | <     | 132          | µg/kg | 14                  | mg/kg | pass             | pass             |
| o-anisidine                 | <               |      | mg/kg |       | N/A          |       | 0.66                | mg/kg | pass             | N/A              |
| anthracene                  | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| benzal chloride             | <               | 2.7  | mg/kg |       | N/A          |       | 6                   | mg/kg | pass             | N/A              |
| benzo(a)anthracene          | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| benzo(a)pyrene              | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| benzo(b)fluoranthene        | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 6.8                 | mg/kg | pass             | pass             |
| benzo(ghi)perylene          | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 1.8                 | mg/kg | pass             | pass             |
| benzo(k)fluoranthene        | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 6.8                 | mg/kg | pass             | pass             |
| bis(2-chloroethoxy)methane  | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 7.2                 | mg/kg | pass             | pass             |
| bis(2-chloroethyl)ether     | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 6                   | mg/kg | pass             | pass             |
| bis(2-chloroisopropyl)ether | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 7.2                 | mg/kg | pass             | pass             |
| butyl benzyl phthalate      | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 28                  | mg/kg | pass             | pass             |
| chrysene                    | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| p-cresidine                 | <               |      | mg/kg |       | N/A          |       | 0.66                | mg/kg | pass             | N/A              |
| dibenz(a,h)anthracene       | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 8.2                 | mg/kg | pass             | pass             |
| diethyl phthalate           | <               | 0.7  | mg/kg | <     | 33           | µg/kg | 28                  | mg/kg | pass             | pass             |
| dimethyl phthalate          | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 28                  | mg/kg | pass             | pass             |
| di-n-butyl phthalate        | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 28                  | mg/kg | pass             | pass             |
| di-n-octyl phthalate        | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 28                  | mg/kg | pass             | pass             |
| diphenylamine               | <               | 0.3  | mg/kg |       | N/A          |       | 13                  | mg/kg | pass             | N/A              |
| disulfoton                  | <               | 1.6  | mg/kg |       | N/A          |       | 6.2                 | mg/kg | pass             | N/A              |
| famphur                     | <               | 0.65 | mg/kg |       | N/A          |       | 15                  | mg/kg | pass             | N/A              |
| fluoranthene                | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| fluorene                    | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| hexachlorobenzene           | <               | 0.3  | mg/kg | <     | 99           | µg/kg | 10                  | mg/kg | pass             | pass             |
| hexachlorobutadiene         | <               | 0.3  | mg/kg | <     | 66           | µg/kg | 5.6                 | mg/kg | pass             | pass             |
| hexachlorocyclopentadiene   | <               | 1.6  | mg/kg | <     | 330          | µg/kg | 2.4                 | mg/kg | pass             | pass             |
| hexachloroethane            | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 30                  | mg/kg | pass             | pass             |
| indeno(1,2,3-c,d)pyrene     | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 3.4                 | mg/kg | pass             | pass             |
| isosaftrole                 | <               | 0.7  | mg/kg |       | N/A          |       | 2.6                 | mg/kg | pass             | N/A              |
| methapyrilene               | <               | 1.6  | mg/kg |       | N/A          |       | 1.5                 | mg/kg | fail             | N/A              |
| methyl parathion            | <               | 1.6  | mg/kg |       | N/A          |       | 4.6                 | mg/kg | pass             | N/A              |
| naphthalene                 | <               | 0.3  | mg/kg | <     | 33           | µg/kg | 5.6                 | mg/kg | pass             | pass             |
| nitrobenzene                | <               | 0.3  | mg/kg | <     | 66           | µg/kg | 14                  | mg/kg | pass             | pass             |

| parameter                         | Aragonite value | units      | State Health<br>lab value | units | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-----------------------------------|-----------------|------------|---------------------------|-------|------------------------------------|-------|---------------------|---------------------|
| n-nitrosodiethylamine             | <               | 0.3 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| n-nitrosodimethylamine            | <               | 0.3 mg/kg  | <                         | 132   | µg/kg                              | 2.3   | mg/kg               | pass                |
| n-nitrosodi-n-butylamine          | <               | 0.3 mg/kg  | N/A                       |       | 17                                 | mg/kg | pass                | N/A                 |
| n-nitrosodi-n-propylamine         | <               | 0.3 mg/kg  | <                         | 99    | µg/kg                              | 14    | mg/kg               | pass                |
| n-nitrosodiphenylamine            | <               | 0.3 mg/kg  | <                         | 66    | µg/kg                              | 13    | mg/kg               | pass                |
| n-nitrosomethylethylamine         | <               | 0.3 mg/kg  | N/A                       |       | 2.3                                | mg/kg | pass                | N/A                 |
| n-nitrosomorpholine               | <               | 0.3 mg/kg  | N/A                       |       | 2.3                                | mg/kg | pass                | N/A                 |
| n-nitrosopiperidine               | <               | 0.3 mg/kg  | N/A                       |       | 35                                 | mg/kg | pass                | N/A                 |
| n-nitrosopyrrolidine              | <               | 0.3 mg/kg  | N/A                       |       | 35                                 | mg/kg | pass                | N/A                 |
| parathion                         | <               | 1.6 mg/kg  | N/A                       |       | 4.6                                | mg/kg | pass                | N/A                 |
| pentachlorobenzene                | <               | 0.3 mg/kg  | N/A                       |       | 10                                 | mg/kg | pass                | N/A                 |
| pentachloroethane                 | <               | 1.6 mg/kg  | N/A                       |       | 6                                  | mg/kg | pass                | N/A                 |
| pentachloronitrobenzene           | <               | 1.6 mg/kg  | N/A                       |       | 4.8                                | mg/kg | pass                | N/A                 |
| pentachlorophenol                 | <               | 1.6 mg/kg  | <                         | 330   | µg/kg                              | 7.4   | mg/kg               | pass                |
| phenacetin                        | <               | 0.7 mg/kg  | N/A                       |       | 16                                 | mg/kg | pass                | N/A                 |
| phenanthrene                      | <               | 0.3 mg/kg  | <                         | 33    | µg/kg                              | 5.6   | mg/kg               | pass                |
| phenol                            | <               | 0.3 mg/kg  | <                         | 66    | µg/kg                              | 6.2   | mg/kg               | pass                |
| phorate                           | <               | 1.6 mg/kg  | N/A                       |       | 4.6                                | mg/kg | pass                | N/A                 |
| phthalic acid                     | <               | 5.2 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| phthalic anhydride                | <               | 5.2 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| pronamide                         | <               | 0.7 mg/kg  | N/A                       |       | 1.5                                | mg/kg | pass                | N/A                 |
| propionitrile                     | volatile        | mg/kg      | N/A                       |       | 360                                | mg/kg | pass                | N/A                 |
| pyrene                            | <               | 0.3 mg/kg  | <                         | 33    | µg/kg                              | 8.2   | mg/kg               | pass                |
| pyridine                          | <               | 0.7 mg/kg  | N/A                       |       | 16                                 | mg/kg | pass                | N/A                 |
| safrole                           | <               | 1.6 mg/kg  | N/A                       |       | 22                                 | mg/kg | pass                | N/A                 |
| triethyl amine                    | <               | 2.7 mg/kg  | N/A                       |       | 1.5                                | mg/kg | fail                | N/A                 |
| tris(2,3-dibromopropyl) phosphate | <               | 0.83 mg/kg | N/A                       |       | 0.1                                | mg/kg | fail                | N/A                 |

nonhalogenated organics 8015B TestAmerica Denver

universal  
treatment  
standard

Aragonite  
vs UTS  
State Lab  
vs UTS

parameter

Aragonite value

units

State Health  
lab value

units

units

methanol

<

1

mg/l

N/A

0.75 mg/l TCLP

fail

N/A

weekly slag  
September 6-12, 2010

chlorinated herbicides 8151A TestAmerica Denver

| parameter         | Aragonite value |       | units | State Health lab | units   | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-------------------|-----------------|-------|-------|------------------|---------|------------------------------------|-------|---------------------|---------------------|
| 2,4-D             | <               | 0.078 | mg/kg | <                | 5 µg/kg | 10                                 | mg/kg | pass                | pass                |
| 2,4,5-T           | <               | 0.02  | mg/kg | <                | 5 µg/kg | 7.9                                | mg/kg | pass                | pass                |
| 2,4,5-TP (Silvex) | <               | 0.02  | mg/kg | <                | 5 µg/kg | 7.9                                | mg/kg | pass                | pass                |

| parameter                 | Aragonite value | units     | State Health<br>lab value | units      | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|---------------------------|-----------------|-----------|---------------------------|------------|------------------------------------|-------|---------------------|---------------------|
| 2,4'-DDD                  | <               | 1.7 µg/kg | N/A                       |            | 0.087 mg/kg                        |       | pass                | N/A                 |
| 4,4'-DDD                  | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.087 mg/kg                        |       | pass                | pass                |
| 2,4'-DDE                  | <               | 1.7 µg/kg | N/A                       |            | 0.087 mg/kg                        |       | pass                | N/A                 |
| 4,4'-DDE                  | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.087 mg/kg                        |       | pass                | pass                |
| 2,4'-DDT                  | <               | 1.7 µg/kg | N/A                       |            | 0.087 mg/kg                        |       | pass                | N/A                 |
| 4,4'-DDT                  | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.087 mg/kg                        |       | pass                | pass                |
| aldrin                    | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| alpha-BHC                 | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| beta-BHC                  | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| chlordane (alpha & gamma) | <               | 1.7 µg/kg | <                         | 660 µg/kg  | 0.26 mg/kg                         |       | pass                | fail                |
| delta-BHC                 | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| dieldrin                  | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.13 mg/kg                         |       | pass                | pass                |
| alpha-endosulfan          | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| beta-endosulfan           | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.13 mg/kg                         |       | pass                | pass                |
| endosulfan sulfate        |                 | 1.7 µg/kg | <                         | 33 µg/kg   | 0.13 mg/kg                         |       | pass                | pass                |
| endrin                    | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.13 mg/kg                         |       | pass                | pass                |
| endrin aldehyde           | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.13 mg/kg                         |       | pass                | pass                |
| famphur                   | semivolatile    | µg/kg     | N/A                       |            | 15 mg/kg                           |       | pass                | N/A                 |
| gamma-BHC                 | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| heptachlor                | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| heptachlor epoxide        | <               | 1.7 µg/kg | <                         | 33 µg/kg   | 0.066 mg/kg                        |       | pass                | pass                |
| isodrin                   | <               | 1.7 µg/kg | N/A                       |            | 0.066 mg/kg                        |       | pass                | N/A                 |
| kepone                    | <               | 74 µg/kg  | N/A                       |            | 0.13 mg/kg                         |       | pass                | N/A                 |
| methoxychlor              | <               | 3.2 µg/kg | <                         | 33 µg/kg   | 0.18 mg/kg                         |       | pass                | pass                |
| toxaphene                 | <               | 66 µg/kg  | <                         | 1320 µg/kg | 2.6 mg/kg                          |       | pass                | pass                |

| total cyanides 9010B9014 - Aragonite Lab |                 |          |              |       |           |       |           |           |
|--|-----------------|----------|--------------|-------|-----------|-------|-----------|-----------|
| parameter                                | Aragonite value |          | State Health |       | universal |       | Aragonite | State Lab |
|  |                 | units    | lab value    | units | treatment | units | vs UTS    | vs UTS    |
|  |                 |          |              |       | standard  |       |           |           |
| cyanides (total)                         | <               | 29 mg/kg | N/A          |       | 590 mg/kg |       | pass      | N/A       |
| cyanides (amenable)                      |                 |          | N/A          |       | 30 mg/kg  |       |           | N/A       |

weekly slag  
September 6-12, 2010

|   |   | Aragonite value | units | State Health<br>lab value | units | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|---|---|-----------------|-------|---------------------------|-------|------------------------------------|-------|---------------------|---------------------|
| TCDDs (all tetrachlorodibenzo-p-dioxins)          | < | 0.5             | µg/kg | N/A                       |       | 0.001                              | mg/kg | pass                | N/A                 |
| TCDFs (all tetrachlorodibenzofurans)              | < | 0.5             | µg/kg | N/A                       |       | 0.001                              | mg/kg | pass                | N/A                 |
| PeCDDs (all pentachlorodibenzo-p-dioxins)         | < | 1.2             | µg/kg | N/A                       |       | 0.001                              | mg/kg | fail                | N/A                 |
| PeCDFs (all pentachlorodibenzofurans)             | < | 1.2             | µg/kg | N/A                       |       | 0.001                              | mg/kg | fail                | N/A                 |
| HxCDDs (all hexachlorodibenzo-p-dioxins)          | < | 1.2             | µg/kg | N/A                       |       | 0.001                              | mg/kg | fail                | N/A                 |
| HxCDFs (all hexachlorodibenzofurans)              | < | 1.2             | µg/kg | N/A                       |       | 0.001                              | mg/kg | fail                | N/A                 |
| 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin         | < | 1.2             | µg/kg | N/A                       |       | 0.0025                             | mg/kg | pass                | N/A                 |
| 1,2,3,4,6,7,8-heptachlorodibenzofuran             | < | 1.2             | µg/kg | N/A                       |       | 0.0025                             | mg/kg | pass                | N/A                 |
| 1,2,3,4,7,8,9-heptachlorodibenzofuran             | < | 1.2             | µg/kg | N/A                       |       | 0.0025                             | mg/kg | pass                | N/A                 |
| 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD) |   | 2.9             | µg/kg | N/A                       |       | 0.005                              | mg/kg | pass                | N/A                 |
| 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF)     | < | 2.5             | µg/kg | N/A                       |       | 0.005                              | mg/kg | pass                | N/A                 |



carbamates 8321A

| parameter                 | Aragonite value |             | State Health lab |       | universal treatment |       | Aragonite | State Lab |
|---------------------------|-----------------|-------------|------------------|-------|---------------------|-------|-----------|-----------|
|                           | value           | units       | value            | units | standard            | units | vs UTS    | vs UTS    |
| Aldicarb sulfone          | <               | 200 µg/kg   | N/A              |       | 0.28                | mg/kg | pass      | N/A       |
| Barban                    | <               | 500 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Bendiocarb                | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Benomyl                   | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Butylate                  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbaryl (Sevin)          | <               | 20 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| Carbenzadim               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbofuran (Furadan)      | <               | 20 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| carbofuran phenol         | <               | 500.0 µg/kg | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbosulfan               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| dithiocarbamates (total)  | <               | 0.5 mg/kg   | N/A              |       | 28                  | mg/kg | pass      | N/A       |
| EPTC                      | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| formetanate hydrochloride | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| m-cumenyl methlycarbamate |                 | µg/kg       | N/A              |       | 1.4                 | mg/kg | N/A       | N/A       |
| Methiocarb (Mesurol)      | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Methomyl (Lannate)        | <               | 70 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| Metolcarb                 | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Mexacarbate               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Molinate                  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Oxamyl                    | <               | 100 µg/kg   | N/A              |       | 0.28                | mg/kg | pass      | N/A       |
| Pebulate                  | <               | 400 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Promecarb                 | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Propham                   | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Propoxur (Baygon)         | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Prosulfocarb              | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Thiodicarb                | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Triallate                 | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Vernolate                 | <               | 400 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| physostigmlne             | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| physostigmlne salicylate  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| thiophanate-methyl        | <               | 500 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 12

summary comparisons  
September 6-12, 2010 weekly residue composite

| parameter                             | Aragonite value | units      | State Health lab value | units     | universal treatment standard | units         | Aragonite vs UTS | State Lab vs UTS |
|---------------------------------------|-----------------|------------|------------------------|-----------|------------------------------|---------------|------------------|------------------|
| 1,1,1,2-tetrachloroethane             | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,1,1-trichloroethane                 | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,1,2,2-tetrachloroethane             | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,1,2-trichloro-1,2,2-trifluoroethane | <               | mg/kg      | N/A                    |           | 30 mg/kg                     | 30 mg/kg      | pass             | N/A              |
| 1,1,2-trichloroethane                 | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,1-dichloroethane                    | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,1-dichloroethene                    | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,2,3-trichloropropane                | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 30 mg/kg                     | 30 mg/kg      | pass             | pass             |
| 1,2-dibromoethane (DBE)               | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| 1,2-dichlorobenzene                   | semivolatile    | mg/kg      | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,2-dichloroethane                    | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,2-dichloropropane                   | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 18 mg/kg                     | 18 mg/kg      | pass             | pass             |
| 1,3-dichlorobenzene                   | semivolatile    | mg/kg      | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,4-dichlorobenzene                   | semivolatile    | mg/kg      | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| 1,4-dioxane                           | <               | 49 mg/kg   | <                      | 170 mg/kg | 170 mg/kg                    | 170 mg/kg     | pass             | pass             |
| n-butanol                             | <               | 20 mg/kg   | N/A                    |           | 2.6 mg/kg                    | 2.6 mg/kg     | fail             | N/A              |
| 2-butanone (MEK)                      | <               | 2 mg/kg    | <                      | 36 mg/kg  | 36 mg/kg                     | 36 mg/kg      | pass             | pass             |
| 2-chloro-1,3-butadiene                | <               | 0.49 mg/kg | N/A                    |           | 0.28 mg/kg                   | 0.28 mg/kg    | fail             | N/A              |
| 1,2-dibromo-3-chloropropane (DBCP)    | <               | 0.98 mg/kg | <                      | 50 µg/kg  | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| allyl chloride                        | <               | 0.98 mg/kg | <                      | 30 mg/kg  | 30 mg/kg                     | 30 mg/kg      | pass             | pass             |
| 4-methyl-2-pentanone                  | <               | 2 mg/kg    | <                      | 33 mg/kg  | 33 mg/kg                     | 33 mg/kg      | pass             | pass             |
| acetone                               | <               | 2 mg/kg    | <                      | 160 mg/kg | 160 mg/kg                    | 160 mg/kg     | pass             | pass             |
| acetonitrile                          | <               | 9.8 mg/kg  | <                      | 38 mg/kg  | 38 mg/kg                     | 38 mg/kg      | pass             | pass             |
| acrylonitrile                         | <               | 9.8 mg/kg  | <                      | 84 mg/kg  | 84 mg/kg                     | 84 mg/kg      | pass             | pass             |
| benzal chloride                       | semivolatile    | mg/kg      | N/A                    |           | 6 mg/kg                      | 6 mg/kg       | pass             | N/A              |
| benzene                               | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 10 mg/kg                     | 10 mg/kg      | pass             | pass             |
| bromodichloromethane                  | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| bromoform                             | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| bromomethane                          | <               | 0.98 mg/kg |                        | 390 µg/kg | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| carbon disulfide                      | <               | 0.49 mg/kg | <                      | 4.8 mg/kg | 4.8 mg/l TCLP                | 4.8 mg/l TCLP | pass             | pass             |
| carbon tetrachloride                  | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| chlorobenzene                         | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| dibromochloromethane                  | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 15 mg/kg                     | 15 mg/kg      | pass             | pass             |
| chloroethane                          | <               | 0.98 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| chloroform                            | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6 mg/kg                      | 6 mg/kg       | pass             | pass             |
| chloromethane                         | <               | 0.98 mg/kg |                        | 125 µg/kg | 30 mg/kg                     | 30 mg/kg      | pass             | pass             |
| cis-1,3-dichloropropene               | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 18 mg/kg                     | 18 mg/kg      | pass             | pass             |

universal  
treatment

| parameter                 | Aragonite value | units      | State Health lab value | units     | standard  | units | Aragonite vs UTS | State Lab vs UTS |
|---------------------------|-----------------|------------|------------------------|-----------|-----------|-------|------------------|------------------|
| cyclohexanone             | <               | 7.9 mg/kg  | N/A                    |           | 0.75 mg/l | TCLP  | fail             | N/A              |
| dibromomethane            | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 15        | mg/kg | pass             | pass             |
| dichlorodifluoromethane   | <               | 0.98 mg/kg | <                      | 50 µg/kg  | 7.2       | mg/kg | pass             | pass             |
| ethyl acetate             | <               | 0.98 mg/kg | <                      | 33 mg/kg  | 33        | mg/kg | pass             | pass             |
| ethyl ether               | <               | 0.98 mg/kg | <                      | 160 mg/kg | 160       | mg/kg | pass             | pass             |
| ethyl methacrylate        | <               | 0.49 mg/kg | <                      | 160 mg/kg | 160       | mg/kg | pass             | pass             |
| ethylbenzene              | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 10        | mg/kg | pass             | pass             |
| iodomethane               | <               | 0.49 mg/kg | <                      | 65 mg/kg  | 65        | mg/kg | pass             | pass             |
| isobutyl alcohol          | <               | 20 mg/kg   | <                      | 170 mg/kg | 170       | mg/kg | pass             | pass             |
| methacrylonitrile         | <               | 4.9 mg/kg  | <                      | 84 mg/kg  | 84        | mg/kg | pass             | pass             |
| methyl methacrylate       | <               | 0.49 mg/kg | <                      | 160 mg/kg | 160       | mg/kg | pass             | pass             |
| methylene chloride        | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 30        | mg/kg | pass             | pass             |
| propionitrile             | <               | 2 mg/kg    | <                      | 360 mg/kg | 360       | mg/kg | pass             | pass             |
| tetrachloroethene         | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6         | mg/kg | pass             | pass             |
| toluene                   | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 10        | mg/kg | pass             | pass             |
| trans-1,2-dichloroethene  | <               | 0.25 mg/kg | <                      | 50 µg/kg  | 30        | mg/kg | pass             | pass             |
| trans-1,3-dichloropropene | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 18        | mg/kg | pass             | pass             |
| trichloroethene           | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 6         | mg/kg | pass             | pass             |
| trichlorofluoromethane    | <               | 0.98 mg/kg | <                      | 50 µg/kg  | 30        | mg/kg | pass             | pass             |
| vinyl chloride            | <               | 0.98 mg/kg | <                      | 50 µg/kg  | 6         | mg/kg | pass             | pass             |
| xlenes (total)            | <               | 0.49 mg/kg | <                      | 50 µg/kg  | 30        | mg/kg | pass             | pass             |

| parameter                          | Aragonite value |     | units | State Health |     | units | universal treatment |       | Aragonite | State Lab |
|------------------------------------|-----------------|-----|-------|--------------|-----|-------|---------------------|-------|-----------|-----------|
|                                    |                 |     |       | lab value    |     |       | standard            |       | vs UTS    | vs UTS    |
| 1,2,4,5-tetrachlorobenzene         | <               | 0.3 | mg/kg |              | N/A |       | 14                  | mg/kg | pass      | N/A       |
| 1,2,4-trichlorobenzene             | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 19                  | mg/kg | pass      | pass      |
| 1,2-dichlorobenzene                | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 6                   | mg/kg | pass      | pass      |
| 1,3-dichlorobenzene                | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 6                   | mg/kg | pass      | pass      |
| 1,3-phenylenediamine               | <               |     | mg/kg |              | N/A |       | 0.66                | mg/kg | pass      | N/A       |
| 1,4-dichlorobenzene                | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 6                   | mg/kg | pass      | pass      |
| 1,4-dinitrobenzene                 | <               | 0.3 | mg/kg |              | N/A |       | 2.3                 | mg/kg | pass      | N/A       |
| 2,3,4,6-tetrachlorophenol          | <               | 1.6 | mg/kg |              | N/A |       | 7.4                 | mg/kg | pass      | N/A       |
| 2,4,5-trichlorophenol              | <               | 0.3 | mg/kg |              | N/A |       | 7.4                 | mg/kg | pass      | N/A       |
| 2,4,6-trichlorophenol              | <               | 0.3 | mg/kg | <            | 66  | µg/kg | 7.4                 | mg/kg | pass      | pass      |
| 2,4-dichlorophenol                 | <               | 0.3 | mg/kg | <            | 66  | µg/kg | 14                  | mg/kg | pass      | pass      |
| 2,4-dimethylaniline(2,4-xylidine)  | <               |     | mg/kg |              | N/A |       | 0.66                | mg/kg | pass      | N/A       |
| 2,4-dimethylphenol                 | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 14                  | mg/kg | pass      | pass      |
| 2,4-dinitrophenol                  | <               | 1.6 | mg/kg | <            | 330 | µg/kg | 160                 | mg/kg | pass      | pass      |
| 2,4-dinitrotoluene                 | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 140                 | mg/kg | pass      | pass      |
| 2,6-dichlorophenol                 | <               | 0.3 | mg/kg |              | N/A |       | 14                  | mg/kg | pass      | N/A       |
| 2,6-dinitrotoluene                 | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 28                  | mg/kg | pass      | pass      |
| 2-acetylaminofluorene              | <               | 3.3 | mg/kg |              | N/A |       | 140                 | mg/kg | pass      | N/A       |
| 2-chloronaphthalene                | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 5.6                 | mg/kg | pass      | pass      |
| 2-chlorophenol                     | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 5.7                 | mg/kg | pass      | pass      |
| 2-methyl phenol                    | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 5.6                 | mg/kg | pass      | pass      |
| 2-nitroaniline                     | <               | 1.6 | mg/kg | <            | 33  | µg/kg | 14                  | mg/kg | pass      | pass      |
| 2-nitrophenol                      | <               | 0.3 | mg/kg | <            | 165 | µg/kg | 13                  | mg/kg | pass      | pass      |
| 2-sec-butyl-4,6-dinitrophenol      | <               | 0.7 | mg/kg |              | N/A |       | 2.5                 | mg/kg | pass      | N/A       |
| 3-methyl phenol                    | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 5.6                 | mg/kg | pass      | pass      |
| 3-methylcholanthrene               | <               | 0.7 | mg/kg |              | N/A |       | 15                  | mg/kg | pass      | N/A       |
| 4,4'-methylenebis(2-chloroaniline) | <               | 0.3 | mg/kg |              | N/A |       | 30                  | mg/kg | pass      | N/A       |
| 4,6-dinitro-2-methylphenol         | <               | 1.6 | mg/kg | <            | 165 | µg/kg | 160                 | mg/kg | pass      | pass      |
| 4-bromophenyl phenyl ether         | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 15                  | mg/kg | pass      | pass      |
| 4-chloro-3-methylphenol            | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 14                  | mg/kg | pass      | pass      |
| 4-chloroaniline                    | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 16                  | mg/kg | pass      | pass      |
| 4-methyl phenol                    | <               | 0.3 | mg/kg | <            | 66  | µg/kg | 5.6                 | mg/kg | pass      | pass      |
| 4-nitroaniline                     | <               | 1.6 | mg/kg | <            | 66  | µg/kg | 28                  | mg/kg | pass      | pass      |
| 4-nitrophenol                      | <               | 1.6 | mg/kg | <            | 330 | µg/kg | 29                  | mg/kg | pass      | pass      |
| 5-nitro-o-toluidine                | <               | 0.7 | mg/kg |              | N/A |       | 28                  | mg/kg | pass      | N/A       |
| acenaphthene                       | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 3.4                 | mg/kg | pass      | pass      |
| acenaphthylene                     | <               | 0.3 | mg/kg | <            | 33  | µg/kg | 3.4                 | mg/kg | pass      | pass      |

| parameter                   | Aragonite value | units      | State Health<br>lab value | units     | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-----------------------------|-----------------|------------|---------------------------|-----------|------------------------------------|-------|---------------------|---------------------|
| acetophenone                | <               | 0.3 mg/kg  | N/A                       |           | 9.7                                | mg/kg | pass                | N/A                 |
| acrylamide                  | <               | 1.6 mg/kg  | N/A                       |           | 23                                 | mg/kg | pass                | N/A                 |
| aniline                     | <               | 0.3 mg/kg  | <                         | 132 µg/kg | 14                                 | mg/kg | pass                | pass                |
| o-anisidine                 | <               | mg/kg      | N/A                       |           | 0.66                               | mg/kg | pass                | N/A                 |
| anthracene                  | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| benzal chloride             | <               | 2.7 mg/kg  | N/A                       |           | 6                                  | mg/kg | pass                | N/A                 |
| benzo(a)anthracene          | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| benzo(a)pyrene              | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| benzo(b)fluoranthene        | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 6.8                                | mg/kg | pass                | pass                |
| benzo(ghi)perylene          | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 1.8                                | mg/kg | pass                | pass                |
| benzo(k)fluoranthene        | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 6.8                                | mg/kg | pass                | pass                |
| bis(2-chloroethoxy)methane  | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 7.2                                | mg/kg | pass                | pass                |
| bis(2-chloroethyl)ether     | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 6                                  | mg/kg | pass                | pass                |
| bis(2-chloroisopropyl)ether | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 7.2                                | mg/kg | pass                | pass                |
| butyl benzyl phthalate      | <               | 0.3 mg/kg  | 47.5                      | µg/kg     | 28                                 | mg/kg | pass                | pass                |
| chrysene                    | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| p-cresidine                 | <               | mg/kg      | N/A                       |           | 0.66                               | mg/kg | pass                | N/A                 |
| dibenz(a,h)anthracene       | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 8.2                                | mg/kg | pass                | pass                |
| diethyl phthalate           | <               | 0.7 mg/kg  | <                         | 33 µg/kg  | 28                                 | mg/kg | pass                | pass                |
| dimethyl phthalate          | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 28                                 | mg/kg | pass                | pass                |
| di-n-butyl phthalate        | <               | 0.3 mg/kg  | 66.9                      | µg/kg     | 28                                 | mg/kg | pass                | pass                |
| di-n-octyl phthalate        | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 28                                 | mg/kg | pass                | pass                |
| diphenylamine               | <               | 0.3 mg/kg  | N/A                       |           | 13                                 | mg/kg | pass                | N/A                 |
| disulfoton                  | <               | 1.6 mg/kg  | N/A                       |           | 6.2                                | mg/kg | pass                | N/A                 |
| famphur                     | <               | 0.66 mg/kg | N/A                       |           | 15                                 | mg/kg | pass                | N/A                 |
| fluoranthene                | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| fluorene                    | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| hexachlorobenzene           | <               | 0.3 mg/kg  | <                         | 99 µg/kg  | 10                                 | mg/kg | pass                | pass                |
| hexachlorobutadiene         | <               | 0.3 mg/kg  | <                         | 66 µg/kg  | 5.6                                | mg/kg | pass                | pass                |
| hexachlorocyclopentadiene   | <               | 1.6 mg/kg  | <                         | 330 µg/kg | 2.4                                | mg/kg | pass                | pass                |
| hexachloroethane            | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 30                                 | mg/kg | pass                | pass                |
| indeno(1,2,3-c,d)pyrene     | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 3.4                                | mg/kg | pass                | pass                |
| isosafrole                  | <               | 0.7 mg/kg  | N/A                       |           | 2.6                                | mg/kg | pass                | N/A                 |
| methapyrilene               | <               | 1.6 mg/kg  | N/A                       |           | 1.5                                | mg/kg | fail                | N/A                 |
| methyl parathion            | <               | 1.6 mg/kg  | N/A                       |           | 4.6                                | mg/kg | pass                | N/A                 |
| naphthalene                 | <               | 0.3 mg/kg  | <                         | 33 µg/kg  | 5.6                                | mg/kg | pass                | pass                |
| nitrobenzene                | <               | 0.3 mg/kg  | <                         | 66 µg/kg  | 14                                 | mg/kg | pass                | pass                |

| parameter                         | Aragonite value | units      | State Health<br>lab value | units | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-----------------------------------|-----------------|------------|---------------------------|-------|------------------------------------|-------|---------------------|---------------------|
| n-nitrosodiethylamine             | <               | 0.3 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| n-nitrosodimethylamine            | <               | 0.3 mg/kg  | <                         | 132   | µg/kg                              | 2.3   | mg/kg               | pass                |
| n-nitrosodi-n-butylamine          | <               | 0.3 mg/kg  | N/A                       |       | 17                                 | mg/kg | pass                | N/A                 |
| n-nitrosodi-n-propylamine         | <               | 0.3 mg/kg  | <                         | 99    | µg/kg                              | 14    | mg/kg               | pass                |
| n-nitrosodiphenylamine            | <               | 0.3 mg/kg  | <                         | 66    | µg/kg                              | 13    | mg/kg               | pass                |
| n-nitrosomethylethylamine         | <               | 0.3 mg/kg  | N/A                       |       | 2.3                                | mg/kg | pass                | N/A                 |
| n-nitrosomorpholine               | <               | 0.3 mg/kg  | N/A                       |       | 2.3                                | mg/kg | pass                | N/A                 |
| n-nitrosopiperidine               | <               | 0.3 mg/kg  | N/A                       |       | 35                                 | mg/kg | pass                | N/A                 |
| n-nitrosopyrrolidine              | <               | 0.3 mg/kg  | N/A                       |       | 35                                 | mg/kg | pass                | N/A                 |
| parathion                         | <               | 1.6 mg/kg  | N/A                       |       | 4.6                                | mg/kg | pass                | N/A                 |
| pentachlorobenzene                | <               | 0.3 mg/kg  | N/A                       |       | 10                                 | mg/kg | pass                | N/A                 |
| pentachloroethane                 | <               | 1.6 mg/kg  | N/A                       |       | 6                                  | mg/kg | pass                | N/A                 |
| pentachloronitrobenzene           | <               | 1.6 mg/kg  | N/A                       |       | 4.8                                | mg/kg | pass                | N/A                 |
| pentachlorophenol                 | <               | 1.6 mg/kg  | <                         | 330   | µg/kg                              | 7.4   | mg/kg               | pass                |
| phenacetin                        | <               | 0.7 mg/kg  | N/A                       |       | 16                                 | mg/kg | pass                | N/A                 |
| phenanthrene                      | <               | 0.3 mg/kg  | <                         | 33    | µg/kg                              | 5.6   | mg/kg               | pass                |
| phenol                            | <               | 0.3 mg/kg  | <                         | 66    | µg/kg                              | 6.2   | mg/kg               | pass                |
| phorate                           | <               | 1.6 mg/kg  | N/A                       |       | 4.6                                | mg/kg | pass                | N/A                 |
| phthalic acid                     | <               | 5.3 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| phthalic anhydride                | <               | 5.3 mg/kg  | N/A                       |       | 28                                 | mg/kg | pass                | N/A                 |
| pronamide                         | <               | 0.7 mg/kg  | N/A                       |       | 1.5                                | mg/kg | pass                | N/A                 |
| propionitrile                     | volatile        | mg/kg      | N/A                       |       | 360                                | mg/kg | pass                | N/A                 |
| pyrene                            | <               | 0.3 mg/kg  | <                         | 33    | µg/kg                              | 8.2   | mg/kg               | pass                |
| pyridine                          | <               | 0.7 mg/kg  | N/A                       |       | 16                                 | mg/kg | pass                | N/A                 |
| safrole                           | <               | 0.3 mg/kg  | N/A                       |       | 22                                 | mg/kg | pass                | N/A                 |
| triethyl amine                    | <               | 10.0 mg/kg | N/A                       |       | 1.5                                | mg/kg | fail                | N/A                 |
| tris(2,3-dibromopropyl) phosphate | <               | 0.83 mg/kg | N/A                       |       | 0.1                                | mg/kg | fail                | N/A                 |

| parameter | Aragonite value |   | units | State Health<br>lab value | units | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-----------|-----------------|---|-------|---------------------------|-------|------------------------------------|-------|---------------------|---------------------|
| methanol  | <               | 1 | mg/l  | N/A                       |       | 0.75 mg/l TCLP                     |       | fail                | N/A                 |

weekly residue  
September 6-12, 2010



chlorinated herbicides 8151A TestAmerica Denver

| parameter         | Aragonite value |      | units | State Health lab | units   | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|-------------------|-----------------|------|-------|------------------|---------|------------------------------------|-------|---------------------|---------------------|
| 2,4-D             | <               | 0.08 | mg/kg | <                | 5 µg/kg | 10                                 | mg/kg | pass                | pass                |
| 2,4,5-T           | <               | 0.02 | mg/kg | <                | 5 µg/kg | 7.9                                | mg/kg | pass                | pass                |
| 2,4,5-TP (Silvex) | <               | 0.02 | mg/kg | <                | 5 µg/kg | 7.9                                | mg/kg | pass                | pass                |

weekly residue  
September 6-12, 2010

| parameter                 | Aragonite value |           | State Health |            | universal   |       | Aragonite |           |
|---------------------------|-----------------|-----------|--------------|------------|-------------|-------|-----------|-----------|
|                           | units           |           | lab value    | units      | treatment   | units | vs UTS    | State Lab |
|                           |                 |           |              |            | standard    |       |           | vs UTS    |
| 2,4'-DDD                  | <               | 1.7 µg/kg |              | N/A        | 0.087 mg/kg |       | pass      | N/A       |
| 4,4'-DDD                  | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.087 mg/kg |       | pass      | pass      |
| 2,4'-DDE                  | <               | 1.7 µg/kg |              | N/A        | 0.087 mg/kg |       | pass      | N/A       |
| 4,4'-DDE                  | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.087 mg/kg |       | pass      | pass      |
| 2,4'-DDT                  | <               | 1.7 µg/kg |              | N/A        | 0.087 mg/kg |       | pass      | N/A       |
| 4,4'-DDT                  | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.087 mg/kg |       | pass      | pass      |
| aldrin                    | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| alpha-BHC                 | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| beta-BHC                  | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| chlordane (alpha & gamma) | <               | 1.7 µg/kg | <            | 660 µg/kg  | 0.26 mg/kg  |       | pass      | fail      |
| delta-BHC                 | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| dieldrin                  | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.13 mg/kg  |       | pass      | pass      |
| alpha-endosulfan          | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| beta-endosulfan           | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.13 mg/kg  |       | pass      | pass      |
| endosulfan sulfate        | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.13 mg/kg  |       | pass      | pass      |
| endrin                    | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.13 mg/kg  |       | pass      | pass      |
| endrin aldehyde           | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.13 mg/kg  |       | pass      | pass      |
| famphur                   | semivolatile    | µg/kg     |              | N/A        | 15 mg/kg    |       | pass      | N/A       |
| gamma-BHC                 | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| heptachlor                | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| heptachlor epoxide        | <               | 1.7 µg/kg | <            | 33 µg/kg   | 0.066 mg/kg |       | pass      | pass      |
| isodrin                   | <               | 1.7 µg/kg |              | N/A        | 0.066 mg/kg |       | pass      | N/A       |
| kepone                    | <               | 75 µg/kg  |              | N/A        | 0.13 mg/kg  |       | pass      | N/A       |
| methoxychlor              | <               | 3.3 µg/kg | <            | 33 µg/kg   | 0.18 mg/kg  |       | pass      | pass      |
| toxaphene                 | <               | 67 µg/kg  | <            | 1320 µg/kg | 2.6 mg/kg   |       | pass      | pass      |

|                     |                 |                |              |           |               |           |           |           |
|---------------------|-----------------|----------------|--------------|-----------|---------------|-----------|-----------|-----------|
|                     |                 | total cyanides |              | 9010B9014 | Aragonite Lab |           |           |           |
|                     |                 |                |              |           |               | universal |           |           |
|                     |                 |                |              |           |               | treatment |           |           |
|                     |                 |                |              |           |               | standard  |           |           |
| parameter           | Aragonite value | units          | State Health | units     | standard      | units     | Aragonite | State Lab |
|                     |                 |                | lab value    |           |               |           | vs UTS    | vs UTS    |
| cyanides (total)    | <               | 29 mg/kg       | N/A          |           | 590 mg/kg     |           | pass      | N/A       |
| cyanides (amenable) |                 |                | N/A          |           | 30 mg/kg      |           |           | N/A       |

weekly residue  
September 6-12, 2010

|   |   | Aragonite value | units | State Health<br>lab value | units | universal<br>treatment<br>standard | units | Aragonite<br>vs UTS | State Lab<br>vs UTS |
|---|---|-----------------|-------|---------------------------|-------|------------------------------------|-------|---------------------|---------------------|
| TCDDs (all tetrachlorodibenzo-p-dioxins)          | < | 1               | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | pass                | N/A                 |
| TCDFs (all tetrachlorodibenzofurans)              | < | 1               | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | pass                | N/A                 |
| PeCDDs (all pentachlorodibenzo-p-dioxins)         | < | 2.5             | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | fail                | N/A                 |
| PeCDFs (all pentachlorodibenzofurans)             | < | 2.5             | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | fail                | N/A                 |
| HxCDDs (all hexachlorodibenzo-p-dioxins)          | < | 2.5             | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | fail                | N/A                 |
| HxCDFs (all hexachlorodibenzofurans)              | < | 2.5             | µg/kg | N/A                       |       | 0.001 mg/kg                        |       | fail                | N/A                 |
| 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin         | < | 2.5             | µg/kg | N/A                       |       | 0.0025 mg/kg                       |       | pass                | N/A                 |
| 1,2,3,4,6,7,8-heptachlorodibenzofuran             | < | 2.5             | µg/kg | N/A                       |       | 0.0025 mg/kg                       |       | pass                | N/A                 |
| 1,2,3,4,7,8,9-heptachlorodibenzofuran             | < | 2.5             | µg/kg | N/A                       |       | 0.0025 mg/kg                       |       | pass                | N/A                 |
| 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD) | < | 5               | µg/kg | N/A                       |       | 0.005 mg/kg                        |       | pass                | N/A                 |
| 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF)     | < | 5               | µg/kg | N/A                       |       | 0.005 mg/kg                        |       | pass                | N/A                 |

carbamates 8321A

| parameter                 | Aragonite value |             | State Health lab |       | universal treatment |       | Aragonite | State Lab |
|---------------------------|-----------------|-------------|------------------|-------|---------------------|-------|-----------|-----------|
|                           | value           | units       | value            | units | standard            | units | vs UTS    | vs UTS    |
| Aldicarb sulfone          | <               | 200 µg/kg   | N/A              |       | 0.28                | mg/kg | pass      | N/A       |
| Barban                    | <               | 500 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Bendiocarb                | <               | 500 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Benomyl                   | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Butylate                  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbaryl (Sevin)          | <               | 20 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| Carbenzadim               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbofuran (Furadan)      | <               | 20 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| carbofuran phenol         | <               | 500.0 µg/kg | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Carbosulfan               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| dithiocarbamates (total)  |                 | 0.94 mg/kg  | N/A              |       | 28                  | mg/kg | pass      | N/A       |
| EPTC                      | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| formetanate hydrochloride | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| m-cumenyl methlycarbamate |                 | µg/kg       | N/A              |       | 1.4                 | mg/kg | N/A       | N/A       |
| Methiocarb (Mesurol)      | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Methomyl (Lannate)        | <               | 70 µg/kg    | N/A              |       | 0.14                | mg/kg | pass      | N/A       |
| Metolcarb                 | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Mexacarbate               | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Molinate                  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Oxamyl                    | <               | 100 µg/kg   | N/A              |       | 0.28                | mg/kg | pass      | N/A       |
| Pebulate                  | <               | 400 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Promecarb                 | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Propham                   | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Propoxur (Baygon)         | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Prosulfocarb              | <               | 200 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Thiodicarb                | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Triallate                 | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| Vernolate                 | <               | 400 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| physostigmine             | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| physostigmine salicylate  | <               | 300 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |
| thiophanate-methyl        | <               | 500 µg/kg   | N/A              |       | 1.4                 | mg/kg | pass      | N/A       |

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 13

chain of custody  
sample receipt

# FIELD TO LAB TRACKING RECORD

|  |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |
|--|---|-----------------|--------------------|---------------------------|---|-------------|------------------------------|---------------------------------|--|------------|---|--|---|--------------------------------------|-------------------------------------|--|
| Section<br>CFF   | Project Name<br>Clean Harbors Aragonite |                 | Cost Code<br>365   |                           | 8260: VOCs (extended analyte list attached) | 8270: SVOCs | 8151: Chlorinated Herbicides | 8081: Organochlorine Pesticides | 1311: TCLP metals (extended analyte list attached) | 8082: PCBs |   |  | State of Utah<br>Unified State Laboratories:<br>Public Health Bureau of<br>Chemical and Environmental<br>Services<br><br>Telephone: 801.965.2400<br>FAX: 801.969.3238 |                                      |                                     |  |
| Sampler Name & Initials (PRINT):<br>Rick Page (RP)   |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  | LAB USE ONLY  |                                      |                                     |  |
| Person to Address Report / Questions To:<br>Rick Page  |   |                 |                    | Phone No.<br>801-536-0230 |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |
| email:<br>rpage@utah.gov   |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |
| Mailing Address: MASOB - 2nd Floor / DSHW - mail code 4880<br>195 North 1950 West, P.O. Box 144880 |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |
| City:<br>Salt Lake City  |   | ST:<br>UT       | Zip:<br>84114-4880 | Phone No.<br>801-536-0200 |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |
| Field ID or Location   |   | Date<br>Sampled | Time<br>(Mil)      | Matrix                    | # of<br>Containers                          |             |                              |                                 |  |            |   |  | LAB<br>Sample<br>Number   | Tamper<br>Seal<br>Intact<br>(Y or N) | Comments<br>(Temp., Leaks,<br>etc.) |  |
| Weekly Slag Composite SL100913W<br>(9-6-2010 through 9-12-2010)                                    |   | 09-13-10        | 0903               | slag                      | 1   | ✓           | ✓                            | ✓                               | ✓  |            |   |  | 201005029   |                                      |                                     |  |
| Weekly Residue Composite RD100913W<br>(9-6-2010 through 9-12-2010)                                 |   | 09-13-10        | 0925               | dust                      | 1   | ✓           | ✓                            | ✓                               | ✓  |            |   |  | 201005030   |                                      |                                     |  |
| Daily Slag Composite SL100913D<br>(9-11-2010)  |   | 09-13-10        | 0844               | slag                      | 1   |             |                              |                                 |  | ✓          | ✓ |  | 201005031   |                                      |                                     |  |
| Daily Residue Composite RD100913D<br>(9-11-2010)   |   | 09-13-10        | 0844               | dust                      | 1   |             |                              |                                 |  | ✓          | ✓ |  | 201005032   |                                      |                                     |  |
|  |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  | 9/13/2010 15:40   |                                      |                                     |  |
|  |   |                 |                    |                           |   |             |                              |                                 |  |            |   |  |   |                                      |                                     |  |

Use this space for comments:

IMPORTANT: Use signatures below this point

|                            |                  |              |                             |                         |
|----------------------------|------------------|--------------|-----------------------------|-------------------------|
| Relinquished By:           | Date             | Time         | Received By:                | Invoice / Airbill #     |
| Print Name >>: N/A         |                  |              | Print Name >>: N/A          | Date Time               |
| Relinquished By:           | Date             | Time         | Received By:                | Invoice / Airbill #     |
| Print Name >>: N/A         |                  |              | Print Name >>: N/A          | Date Time               |
| Relinquished By: Rick Page | Date<br>09/13/10 | Time<br>1539 | Received By LAB: David Dick | Invoice / Airbill #     |
| Print Name >>: Rick Page   |                  |              | Print Name >>: David Dick   | Date 9-13-10 Time 15:40 |

# FIELD TO LAB TRACKING RECORD

|  |   |                               |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
|--|---|-------------------------------|--------------------|---------------------------|---|---|---|---|---|---|--|--|---|-------------------|-----------------------------|-------------------------------|------|
| Section<br>CFF   | Project Name<br>Clean Harbors Aragonite |                               | Cost Code<br>365   |                           | 8260: VOCs (extended analyte list attached)<br>8270: SVOCs<br>8151: Chlorinated Herbicides<br>8081: Organochlorine Pesticides<br>1311: TCLP metals (extended analyte list attached)<br>8082: PCBs |   |   |   |   |   |  |  | State of Utah<br>Unified State Laboratories:<br>Public Health Bureau of<br>Chemical and Environmental<br>Services<br><br>Telephone: 801.965.2400<br>FAX: 801.969.3238 |                   |                             |                               |      |
| Sampler Name & Initials (PRINT):<br>Rick Page (RP)   |   |                               |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| Person to Address Report / Questions To:<br>Rick Page  |   |                               |                    | Phone No.<br>801-536-0230 |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| email:<br>rpage@utah.gov   |   |                               |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| Mailing Address: MASOB - 2nd Floor / DSHW - mail code 4880<br>195 North 1950 West, P.O. Box 144880 |   |                               |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| City:<br>Salt Lake City  |   | ST:<br>UT                     | Zip:<br>84114-4880 | Phone No.<br>801-536-0200 |   | LAB USE ONLY<br><table border="1"> <tr> <td>LAB Sample Number</td> <td>Tamper Seal Intact (Y or N)</td> <td>Comments (Temp., Leaks, etc.)</td> </tr> </table> |   |   |   |   |  |  |   | LAB Sample Number | Tamper Seal Intact (Y or N) | Comments (Temp., Leaks, etc.) |      |
| LAB Sample Number  | Tamper Seal Intact (Y or N)             | Comments (Temp., Leaks, etc.) |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| Field ID or Location   | Date Sampled                            | Time (Mil)                    | Matrix             | # of Containers           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |
| Weekly Slag Composite SL100913W<br>(9-6-2010 through 9-12-2010)                                    | 09-13-10                                | 0903                          | slag               | 1                         | ✓   | ✓   | ✓ | ✓ |   |   |  |  | 201005029   | 9/13/2010 15:40   | Y                           | OK x 1                        | 12.1 |
| Weekly Residue Composite RD100913W<br>(9-6-2010 through 9-12-2010)                                 | 09-13-10                                | 0925                          | dust               | 1                         | ✓   | ✓   | ✓ | ✓ |   |   |  |  | 201005030   | 9/13/2010 15:40   | Y                           |                               | 15.2 |
| Daily Slag Composite SL100913D<br>(9-11-2010)  | 09-13-10                                | 0844                          | slag               | 1                         |   |   |   |   | ✓ | ✓ |  |  | 201005031   | 9/13/2010 15:40   | ✓                           |                               | 12.7 |
| Daily Residue Composite RD100913D<br>(9-11-2010)   | 09-13-10                                | 0844                          | dust               | 1                         |   |   |   |   | ✓ | ✓ |  |  | 201005032   | 9/13/2010 15:40   | ✓                           |                               | 14.7 |
|  |   |                               |                    |                           |   |   |   |   |   |   |  |  | 9/13/2010 15:40   |                   |                             |                               |      |
|  |   |                               |                    |                           |   |   |   |   |   |   |  |  |   |                   |                             |                               |      |

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IMPORTANT: Use signatures below this point

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| Relinquished By:           | Date     | Time | Received By:                       | Invoice / Airbill #     |
| Print Name >>: N/A         |          |      | Print Name >>: N/A                 | Date Time               |
| Relinquished By:           | Date     | Time | Received By:                       | Invoice / Airbill #     |
| Print Name >>: N/A         |          |      | Print Name >>: N/A                 | Date Time               |
| Relinquished By: <i>RP</i> | Date     | Time | Received By LAB: <i>David Dick</i> | Invoice / Airbill #     |
| Print Name >>: Rick Page   | 09/13/10 | 1539 | Print Name >>: David Dick          | Date 9-13-10 Time 15:40 |





UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF SOLID AND HAZARDOUS WASTE  
288 NORTH 1460 WEST  
P.O. BOX 144880  
SALT LAKE CITY, UT 84114-4880  
(801) 538-6170



**SAMPLE RECEIPT**

|   |  |
|---|--|
| Facility Name<br>Clean Harbors Aragonite, LLC         | Facility Phone #<br>801-323-8100         |
| Facility Address<br>I-80 Exit 56, Tooele County, Utah | Date of Inspection<br>September 13, 2010 |

DESCRIPTION OF SAMPLE(S) TAKEN:

- 1) Weekly slag composite from 9-6-2010 through 9-12-2010
- 2) Weekly residue composite from 9-6-2010 through 9-12-2010
- 3) Daily slag composite from 9-11-2010
- 4) Daily residue composite from 9-11-2010

|                                       |                        |   |                        |
|---------------------------------------|------------------------|---|------------------------|
| Inspector Signature<br><i>DP PAGE</i> | Date Signed<br>9/13/10 | Facility Representative Signature<br><i>[Signature]</i> | Date Signed<br>9/13/10 |
|---------------------------------------|------------------------|---|------------------------|

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 14

## Memo To File

Semi-volatile analyses for the Slag weekly composite (9/06/10– 9/12/10) has an elevated reporting limit for *Tris(2,3-dibromopropyl)phosphate* of 0.830mg/Kg versus treatment standard of 0.1mg/Kg, elevated reporting limit for *Methapyrilene* of 1.6mg/Kg versus treatment standard of 1.5mg/Kg, and elevated reporting limit for *triethylamine* of 2.7mg/Kg versus treatment standard of 1.5mg/Kg, and elevated reporting limit for *Carbofuran Phenol* of 2.7mg/Kg versus treatment standard of 1.4mg/Kg.

The volatile analyses for the slag weekly composite has an elevated reporting limit for *n-butyl alcohol* of 10.0mg/Kg versus treatment standard of 2.6mg/Kg.

The dioxin/furan analysis for the slag composite has an elevated reporting limit for *Total Pentachlorodibenzodioxin/furan* of 1.2ug/Kg versus treatment standard of 1.0ug/Kg, elevated reporting limit for *Total hexachlorodibenzodioxin/furan* of 1.2ug/Kg versus treatment standard of 1.0ug/Kg.

The semi-volatile and volatile result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

## Memo To File

Semi-volatile analyses for the Residue weekly composite (9/06/10– 9/12/10) has an elevated reporting limit for *Tris(2,3-dibromopropyl)phosphate* of 0.830mg/Kg versus treatment standard of 0.1mg/Kg, , and elevated reporting limit for *triethylamine* of 2.7mg/Kg versus treatment standard of 1.5mg/Kg, elevated reporting limit for *Methapyrilene* of 1.6mg/Kg versus treatment standard of 1.5mg/Kg.

The volatile analyses for the Residue weekly composite has an elevated reporting limit for *n-butyl alcohol* of 20.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for *2-Chloro-1,3-butadiene* of 0.49mg/Kg versus treatment standard of 0.28mg/Kg.

The dioxin/furan analysis for the weekly residue composite has an elevated reporting limit for *Total pentachlorodibenzodioxin/furan* of 2.5ug/Kg versus treatment of 1.0ug/Kg, elevated reporting limit for *Total hexachlorodibenzodioxin/furan* of 2.5ug/Kg versus treatment of 1.0ug/Kg.

The semi-volatile and volatile result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 15

**Rick Page - FW: lab questions**

---

**From:** "Mensing, Jeffrey L" <mensing.jeffrey@cleanharbors.com>  
**To:** "Rick Page" <rpage@utah.gov>  
**Date:** 10/19/2010 6:00 AM  
**Subject:** FW: lab questions  
**CC:** "LUNT, DAVID" <LUNT.DAVID@cleanharbors.com>  
**Attachments:** answers to lab questions.DOC

---

Rick:

Here is a response to your questions. If any questions, please let me or Dave know.

Jeff

---

**From:** LUNT, DAVID  
**Sent:** Tuesday, October 12, 2010 12:45 PM  
**To:** Mensinger, Jeffrey L  
**Subject:** RE: lab questions

Jeff,

Here is an answer to Rick's questions for your review.

Thanks

Dave

---

**From:** Mensinger, Jeffrey L  
**Sent:** Wednesday, October 06, 2010 11:26 AM  
**To:** LUNT, DAVID  
**Subject:** FW: lab questions

Dave:

Here are Rick's questions with regards to the analysis you gave him. When you respond to him please copy me.

Thanks

Jeff

**From:** Rick Page [mailto:rpage@utah.gov]  
**Sent:** Wednesday, October 06, 2010 9:40 AM  
**To:** Mensinger, Jeffrey L  
**Subject:** lab questions

Jeff,

Would you please forward these questions to Dave Lunt (I don't have his email address). Thanks

Rick Page

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact Clean Harbors Environmental Services at 781.792.5555 and delete the material from any computer.

The analytical results for methanol were reported in mg/l. Are these TCLP results or total results?

*These results are not TCLP they are total. Procedure uses DI water extraction and analyzes the water leachate for methanol.*

I couldn't find results for 1,3-phenylenediamine, 2,4-dimethylaniline(2,4-xylydine), o-anisidine, p-cresidine, and m-cumenyl methylcarbamate. Did I miss them somewhere? Last time, m-cumenyl methylcarbamate was not analyzed because Clean Harbors hadn't burned any waste codes that required this analysis. If that is the case again, would you please send me the documentation.

*The following compounds 1,3-phenylenediamine (1,3-phenylenediamine), 2,4-dimethylaniline(2,4-xylydine), o-anisidine, p-cresidine were not being analyzed by Test America Labs, they have now been added to the 8270C list. The current carbamate campaign is for waste codes K156, K161, U278, U279, P188 and P189 which do not include m-cumenyl methylcarbamate.*

Your Memo to File for the slag analyses says that carbofuran phenol had an elevated detection limit of 2.7 mg/kg compared to a treatment standard of 1.4 mg/kg. However, the analytical report shows that carbofuran was not detected at a reporting limit of 500 µg/kg (0.5 mg/kg). Please explain.

*The 2.7mg/Kg limit for carbofuran was from the 8270C analysis my mistake for not using the lower limit from the 8321 analysis for carbamates.*

The dioxin/furan analyses for pentachlorodibenzodioxin, pentachlorodibenzofuran, hexachlorodibenzodioxin, and hexachlorodibenzofuran in the slag and residue were not detected at a reporting limit of 1.2 µg/kg and 2.5 µg/kg respectively. The UTS for these compounds is 1.0 µg/kg. This was noted on the Memo to File but no justification for meeting the standard was given.

*I thought the memo to file provided the justification in the last paragraph: The semi-volatile and volatile result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes... "the treatment or disposal facility may demonstrate compliance*



*with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."*

When you get the printer issues fixed would you please print me an official report for the metals and PCBs for September 11.

*The issue is not with the printer but with upgrading our LIMs system from Access that ran in Windows 95 to Access for Windows 2003. Jeremy Beatty is currently working on this transition.*

Thanks,  
Rick Page  
801-536-0230  
rpage@utah.gov

Clean Harbors Aragonite  
FY2010 Inspection Report  
September 13-21, 2010

# Attachment 16

## HSWA Analytical Review

Matrix      SLAG

HSWA DATE: 9/11/2010

|                  | YES                                 | NO                       |
|------------------|-------------------------------------|--------------------------|
| Dioxin Campaign: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| K061 Campaign:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| OK TO SHIP       | <input checked="" type="checkbox"/> | FULL DAY                 |
|                  | <input type="checkbox"/>            | Rolloffs: _____          |
| REBURN           | <input type="checkbox"/>            | FULL DAY                 |
|                  | <input type="checkbox"/>            | Rolloffs: _____          |

### FAILED TREATMENT STANDARDS

Daily Composite/Rolloff

| Analyte | Waste Codes | Treatment Standard | Result | Units |
|---------|-------------|--------------------|--------|-------|
|---------|-------------|--------------------|--------|-------|

ALL PARAMETERS MEET TREATMENT STANDARD

Reviewed by: Heidi Star

9/27/2010

## HSWA Analytical Review

Matrix        RESIDUE

HSWA DATE: 9/11/2010

|                  | YES                                 | NO                       |
|------------------|-------------------------------------|--------------------------|
| Dioxin Campaign: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| K061 Campaign:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| OK TO SHIP       | <input checked="" type="checkbox"/> | FULL DAY                 |
|                  | <input type="checkbox"/>            | Rolloffs: _____          |
| REBURN           | <input type="checkbox"/>            | FULL DAY                 |
|                  | <input type="checkbox"/>            | Rolloffs: _____          |

### FAILED TREATMENT STANDARDS

Daily Composite/Rolloff

| Analyte | Waste Codes                                   | Treatment Standard | Result | Units |
|---------|---|--------------------|--------|-------|
| Cd      | D006 F006-009 F011-12 F039 K028 K069 K100 UTS | 0.11               | 1.91   | mg/L  |
| Hg      | F039 K071 K106 P092 UTS                       | 0.025              | 0.047  | mg/L  |
| Ag      | D011 F006-009 F011-12 F039 P099 P104 UTS      | 0.14               | 0.16   | mg/L  |
| Zn      | K061 UTS                                      | 4.3                | 25.5   | mg/L  |

Total Hg: 44.8mg/Kg

Reviewed by: 

9/28/2010